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ABSTRACT

This annual report of the Assembly of Life Sciences (ALS) covers the fiscal year beginning July 1, 1977, and ending June 30, 1978. This report has four major sections on the Executive Office, the Division of Biological Sciences, the Division of Medical Sciences, and the Board on Toxicology and Environmental Health Hazards. The activities in each section are listed alphabetically. Organization charts at the beginning of each section show the structure within the ALS and the Assembly's relation to the National Academy of Sciences (NAS). A list of all reports completed by ALS committees during the year and a list of the Corresponding Societies of the Assembly are found at the end of this report. (Author/BB)

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1977-1978 Report

ASSEMBLY
OF LIFE
SCIENCES

NATIONAL
RESEARCH
COUNCIL

NATIONAL ACADEMY OF SCIENCES

SE 027 506

1977-1978 Report

**ASSEMBLY OF LIFE SCIENCES
NATIONAL RESEARCH COUNCIL**

**NATIONAL ACADEMY OF SCIENCES
Washington, D.C. 1978**

PREFACE

This annual report of the Assembly of Life Sciences (ALS) covers the fiscal year beginning July 1, 1977, and ending June 30, 1978. Although brief histories of some committees have been given as background for their activities during this reporting period, the lists of meetings, members, and reports and statements of accomplishments reflect productivity only for the above-mentioned period. Activities that continue beyond June 30, 1978, are identified. All meetings were held in Washington, D.C., unless otherwise shown.

This report has four major sections: on the Executive Office, the Division of Biological Sciences, the Division of Medical Sciences, and the Board on Toxicology and Environmental Health Hazards. The activities in each section are listed alphabetically insofar as possible. Organization charts at the beginning of each section show the structure within the ALS and the Assembly's relation to the National Academy of Sciences (NAS).

For further information on committee membership, consult the 1978 Directory of the ALS. Details concerning committee deliberations and conclusions can be found in the formal individual committee reports, which are available in most cases from the Assembly office, the NAS Office of Publications (formerly the Printing and Publishing Office), or the National Technical Information Service (NTIS).

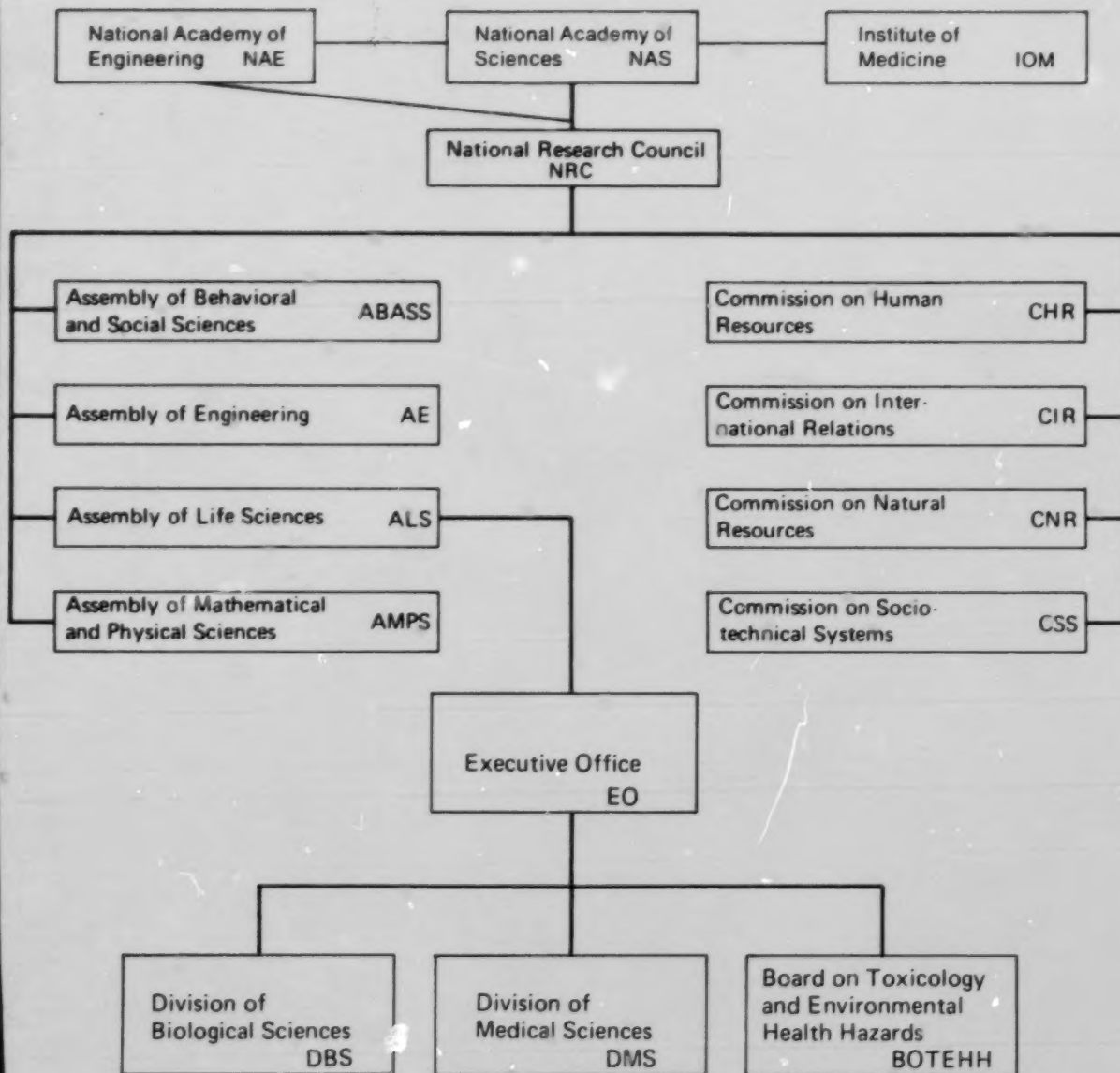
A list of all reports completed by ALS committees during the year and a list of the Corresponding Societies of the Assembly are found at the end of this report.

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ASSEMBLY OF LIFE SCIENCES

ASSEMBLY OF LIFE SCIENCES

Summary Description: The Assembly of Life Sciences (ALS), formerly titled the ALS Executive Committee, is composed of 25 members, generally appointed for 3-year terms. Five meetings are held each year. Both biologic expertise and medical expertise are represented in the Assembly. The Assembly establishes policy, reviews and recommends acceptance or rejection of each new program proposed by its several elements, develops an Annual Program Plan for presentation to the Governing Board of the National Research Council, and is ultimately responsible for the selection of all ALS committee members, for the conduct of committee studies, and for the scientific validity of committee reports.

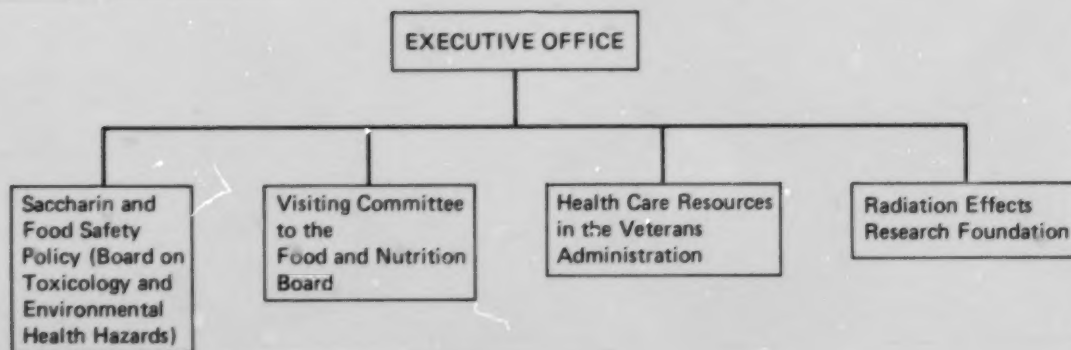
Membership (with year that term expires):

Frank W. Putnam, <u>Chairman</u> (1980)	Gene E. Likens (1980)
Harry Beevers (1979)	Brian MacMahon (1980)
Lloyd M. Beidler (1978)	Maclyn McCarty (1978)
Robert W. Berliner (1978)	Alton Meister (1978)
Myron K. Brakke (1978)	Norton Nelson (1978)
Robert H. Burris (1979)	Gordon H. Orians (1979)
John E. Dowling (1979)	Elizabeth S. Russell (1978)
Paul A. Ebert (1979)	Howard A. Schneiderman (1978)
Jack R. Harlan (1980)	Donald W. Seldin (1979)
David M. Hegsted (1978)	Norton D. Zinder (1978)
Howard H. Hiatt (1978)	
James G. Hirsch (1980)	<u>Ex officio</u>
Elwood V. Jensen (1978)	David A. Hamburg (IOM)
Alfred G. Knudson, Jr. (1978)	

Meetings:

September 26-27, 1977
November 14-15, 1977
January 16, 1978
March 20, 1978
May 15-16, 1978

EXECUTIVE OFFICE
SPECIAL PROGRAMS



EXECUTIVE OFFICE: SPECIAL PROGRAMS

Although the bulk of the activities of the Assembly of Life Sciences are lodged in either the Division of Medical Sciences, the Division of Biological Sciences, or the Board on Toxicology and Environmental Health Hazards, some programs are directly under the supervision of the Executive Director. Some of these programs involve very large financial support; others deal with subject matter that is primarily neither medical, toxicologic, nor biologic, but bridges two or all three of those disciplines.

ADVISORY COMMITTEE ON THE RADIATION EFFECTS RESEARCH FOUNDATION

Summary Description: The Advisory Committee on the Radiation Effects Research Foundation was established within the Assembly of Life Sciences to give program advice and assistance to NAS with respect to the Radiation Effects Research Foundation (RERF). RERF was created on April 1, 1975, as the successor to the programs, personnel, and facilities of the Atomic Bomb Casualty Commission (ABCC). ABCC, which was organized in 1947 as a field agency of NAS with funding from the Atomic Energy Commission, had the mission of determining the late effects of radiation from the atomic bombs on the surviving populations of Hiroshima and Nagasaki. The RERF is a private, nonprofit foundation, established under Japanese law. It is funded equally by the two nations: by Japan through a subsidy from the Ministry of Health and Welfare, and by the United States through a subcontract from NAS, with funds received from the Department of Energy (DOE). In addition, relatively small amounts of support have been received through contracts from the National Cancer Institute and the National Heart, Lung, and Blood Institute.

The RERF is governed by a board of directors, half Japanese and half American. The board receives scientific advice on the RERF program from a scientific council composed of 10 scientists, half of each nationality. The science councillors are formally elected by the board of directors, but the U.S. candidates are nominated by NAS through DOE.

Membership:

Advisory Committee:

James F. Crow, Chairman
Alexander G. Bearn
Michael A. Bender
Eugene P. Cronkite
Bernard G. Greenberg

Brian MacMahon
Robert W. Miller
Robert S. Stone
John B. Storer

Science Council:

Soichi Iijima, Chairman
Harue Katsunuma
Toshiyuki Kumatori
Ei Matsunaga
Tsutomu Sugahara

Brian MacMahon, Vice Chairman
Alexander G. Bearn
Eugene P. Cronkite
James F. Crow
John B. Storer

Staff:

Seymour Jablon

Meetings:

January 24-25, 1978	(Board of Directors, Nagasaki)
March 22-24, 1978	(Science Council, Hiroshima)
June 27-28, 1978	(Board of Directors, Hiroshima)

Accomplishments: During the year, the new study of genetic effects of radiation at the biochemical level achieved its target rate of 400 blood specimens obtained and processed monthly.

At its June meeting, the board of directors accepted the recommendations of the science council that the autopsy procurement program be terminated and that the Department of Pathology develop an experimental pathology program in place of the previous program, which was centered almost entirely on autopsies. This step was recommended on the grounds that the autopsy rate had fallen to an inadequate level (about 20%) in recent years and that attempts to improve it had been unavailing.

The 3-year terms of office of the four permanent directors of the Foundation having expired, elections were held by the board at its June meeting. The following were elected:

- Chairman: Dr. Masao Tamaki, to succeed Dr. Hisao Yamashita.
(Dr. Tamaki is retiring as Professor of Radiology at Osaka City University.)
- Vice Chairman: Dr. Stuart C. Finch, to succeed Dr. LeRoy Allen.
(Dr. Allen is retiring. Dr. Finch will serve concurrently as chief of research.)
- Permanent director: Dr. Masuo Takabe (re-elected).
- Permanent director: Dr. William J. Schull. (Dr. Schull will be on leave of absence from the University of Texas, where he is director of the Center for Demographic and Population Genetics.)

STUDY ON SACCHARIN AND FOOD SAFETY POLICY

Summary Description: The Saccharin Study and Labeling Act of 1977 (Public Law 95-203) required the Secretary of Health, Education, and Welfare to ask the NAS to undertake a study of the safety of saccharin and a broader evaluation of food safety regulatory procedures and their societal impact. Because this entailed two distinct tasks, it was decided to design a joint Institute of Medicine-Assembly of Life Sciences effort. A coordinating committee--the Committee for a Study on Saccharin and Food Safety Policy--was established in January 1978, as were two study panels. Panel I (Saccharin and Its Impurities and Technical Means for Risk-Benefit Assessment), of the ALS, is addressing the specific question of the safety of saccharin and the benefits that might be attributed to the substance and, more generally, studying the technical means for assessing the risks and benefits of substances in foods. Panel II (Food Safety Regulation and Societal Impact), of the IOM, is addressing the matter of the food safety regulatory process and its societal impact.

Panel I has been divided into three subpanels. The Subpanel on Toxicology is evaluating the results of animal studies entailing the feeding of saccharin. The Subpanel on Epidemiology is reviewing the results of research on human health effects of saccharin and other selected food additives and will analyze the role of epidemiologic research in the development of food safety regulatory policy. The Subpanel on Benefits is assessing the health benefits of saccharin and other nonnutritive sweeteners.

Membership:

Committee:

Frederick C. Robbins, Chairman
Stephen G. Breyer
David L. Call
Thomas Ehrlich
Emmanuel Farber
Clifford Grobstein

Richard L. Hall
Alexander Hollaender
George B. Hutchison
Kenneth L. Melmon
Walter A. Rosenblith
Gloria W. Schaffer

Panel I:

Emmanuel Farber, Chairman
Fred P. Abramson
Charles C. Brown
James P. Carlos
Frank F. Davidoff
John Doull
Alfred E. Harper

Ian T. T. Higgins
Ronald K. Kalkhoff
Joyce McCann
Willard B. Robinson
Sheldon W. Samuels
Donald F. Steiner
Eliot Stellar

Staff:

Councilman Morgan
Alvin G. Lazen
Robert G. Tardiff

David F. Goldsmith
Muriel M. Lippman
Sushma Palmer
Frances M. Peter

Meetings:

April 8, 1978	(Committee)
April 17-18, 1978	(Panel I)
April 29, 1978	(Panel II)
May 30, 1978	(Panel I, Subpanel on Benefits)
June 6-7, 1978	(Panel II)
June 10, 1978	(Panel I, Subpanel on Toxicology)
June 19, 1978	(Public meeting)
June 20, 1978	(Committee)
June 21, 1978	(Panel I)

Accomplishments: This period was devoted to an intensive effort on the part of the staff and Panel I members to acquire data relevant to the tasks of the subgroups. In addition to a search of the literature, the effort included personal communication with a number of international and domestic sources to acquire unpublished data and opinions. This information has been incorporated into reports that have been reviewed and revised by members of the appropriate subpanels. Drafts of the subpanel reports will be presented for review by the entire Panel in August.

HEALTH CARE RESOURCES IN THE VETERANS' ADMINISTRATION

Summary Description: The report Health Care for American Veterans was transmitted to the Congress and the Veterans' Administration (VA) in June 1977, during the last reporting period of the ALS. However, substantial activity involving members and staff of the Committee on Health Care Resources in the Veterans' Administration continued during the period of this report. The activity centered on briefing the VA and the House and Senate Committees on Veterans' Affairs. As required in the Act calling for an Academy study, the VA responded to the ALS report in September 1977. In February 1978, the VA detailed plans to implement 23 of the 37 recommendations made in the Academy report.

Briefings and Congressional Testimony:

July 19-21, 1977	House hearings and briefings of VA Administrator and staff Washington, D.C. Saul Farber, Melvin Sabshin, David Tilson
September 30, 1977	Senate hearings; VA witnesses and VA Washington, D.C. Saul Farber, David Tilson, Alvin Lazen

October 17, 1977

Senate hearings
Washington, D.C.
Saul Farber, David Tilson,
Alvin Lazen

November 17, 1977

Senate hearings; mental health
care
Los Angeles, CA
Shervert H. Frazier, Saul Farber,
Alvin Lazen

January 11, 1978

Senate hearings; long-term care
Beckley, WV
(written testimony only)

February 6, 1978

Senate hearings; health-care
resources
Washington, D.C.
Saul Farber, Charles Flagle,
David Tilson, Alvin Lazen

March 6, 1978

Senate hearings; quality cost
Washington, D.C.
Saul Farber, Myrtle Aydelotte,
Joseph Hamburg, David Tilson,
Alvin Lazen

March 6, 1978

Senate hearings; biomedical
research in the VA
Washington, D.C.
Leighton Cluff, Alvin Lazen

Staff:

Alvin G. Lazen

David Tilson

VISITING COMMITTEE TO THE FOOD AND NUTRITION BOARD

A visiting committee to review the activities of the Food and Nutrition Board (FNB) was established in early 1977 and completed its review in September 1977.

In its report to the Assembly, the Visiting Committee identified as a major issue the lack of coordination among NAS-NRC units involved with food and nutrition matters. The Committee recommended the formation of an independent commission on food and nutrition, to include relevant committees and boards distributed within the Academy structure.

Recognizing that establishment of a commission might not be feasible, the Visiting Committee also presented a less preferred recommendation for the formation of a coordinating committee for food and nutrition, consisting of staff representatives from the Assembly of Behavioral and Social Sciences, the ALS, the Commission on International Relations, the Commission on Natural Resources, the Commission on Sociotechnical Systems, and the Institute of Medicine.

Concerning the Food and Nutrition Board, the Visiting Committee recommended that the membership be diversified by the application of a very careful selection process to the identification and appointment of food and nutrition scientists and persons from other disciplines who would address current nutritional problems. The Visiting Committee further recommended an increase in the size of the FNB staff, a program to orient new FNB members, and the drafting of clear mandates for each FNB committee, to be followed by transmission of each mandate to the appropriate committee. The Visiting Committee recommended that the FNB hold meetings devoted to planning its program; develop improved patterns of liaison with government agencies; search for means within Academy guidelines to make known its specific judgments on matters of food policy; and survey developments, including federal agency actions, in food and nutrition matters, in order to respond to those developments. The Visiting Committee recommended that the FNB have a resident chairman and initiate a food and nutrition newsletter.

The Assembly received the report of the Visiting Committee at the Assembly meeting of September 1977. In discussions at that meeting and a later Governing Board meeting, it was determined that formation of a commission was not feasible, but that efforts should be made to implement the recommendation concerning a coordinating committee and recommendations concerning the FNB itself.

Membership:

Herbert E. Carter, Chairman
Lloyd M. Beidler
Robert B. Choate
Howard A. Eder
William G. Flamm

Ogden C. Johnson
Herbert P. Sarett
Emil L. Smith
Selma E. Snyderman

Staff:

Alvin G. Lazen

Meetings:

July 12-13, 1977
September 8-9, 1977

DIVISION OF BIOLOGICAL SCIENCES

DIVISION OF BIOLOGICAL SCIENCES

Food and Nutrition Board (FNB)

Institute of Laboratory Animal Resources (ILAR)

Committees:

- Aerobiology
- Biology of Pest Species
- Germplasm Resources
- Indigenous Tropical Agricultural Ecosystems
- Research Priorities in Tropical Biology
- USNC/International Union of Biological Sciences
- USNC/International Union of Nutritional Sciences
- USNC/International Union for Pure and Applied Biophysics
 - Subcommittee:*
 - Travel Grants, VI International Biophysics Congress
- USNC/Photobiology

Committees:

- Clinical Nutrition
- Dietary Allowances
- Food Consumption Patterns
- Food Protection
 - Subcommittees:*
 - Codex Specifications
 - Food Microbiology
 - Food Technology
 - Toxicology
- GRAS List Survey, Phase III
- International Nutrition Programs
 - Subcommittees:*
 - Interactions of Nutrition and Infection
 - Nutrition and Fertility
- Nutrition and Dental Health
- Nutrition, Brain Development, and Behavior
- Nutrition of the Mother and Preschool Child
- Sodium-Restricted Diets

Committees:

- Animal Models and Genetic Stocks
- Animal Models for Research on Aging
 - Subcommittees:*
 - Carnivores
 - Lagomorphs and Rodents other than Rats and Mice
 - Mice
 - Nonhuman Primates
 - Rats
- Animal Models of Fertility and Contraception
- Care and Use of Laboratory Animals
- Conservation of Laboratory Animals
- Education
- Genetics
- Histologic Classification of Laboratory Animal Tumors
 - Subcommittee:*
 - Rat Liver Tumors
- Laboratory Animal Data
- Laboratory Animal Diets
- Laboratory Animal Facilities and Resources
- Laboratory Animal Housing
- Laboratory Animal Records
- Marine Invertebrates
- Nonhuman Primates
 - Subcommittees:*
 - Care and Use
 - Conservation of Natural Populations
 - Genetics and Breeding Requirements

DIVISION OF BIOLOGICAL SCIENCES

The Division of Biological Sciences consists of two clusters of committees--under the Food and Nutrition Board (FNB) and the Institute of Laboratory Animal Resources (ILAR), which deal with issues suggested by those titles--and a number of individual committees. Of the latter, four are United States National Committees affiliated with international nongovernmental science organizations, and the remainder are free-standing groups, which are formed to address particular tasks and usually go out of existence when those tasks are completed.

For any given reporting period, most of what has been accomplished in the Division can be described under the titles of formally established committees. There are also developing activities that have not yet reached committee status, but that must be described if the report itself is to be complete. A developing activity that is strictly in the province of an existing committee is noted in the write-up of that committee.

DEVELOPING ACTIVITIES

Workshop on Microbial Pathogens as Biological Control Agents

Efforts to obtain the funds necessary to carry out this study have thus far been unsuccessful. The Environmental Protection Agency, although it initially expressed great interest, has not yet acted on the proposal; it seems increasingly unlikely that it will do so.

Workshop on Population Biology as Applied to Managed Ecosystems

No further activities in direct relation to this workshop were undertaken during the reporting year; attention will be focused, rather, on ecological theory and decision-making (see below).

Symposium on the Biological Basis of Interactions between Birds and Man

It has not been possible, despite extensive efforts, to find adequate funds to support this symposium; unless the climate in this regard changes appreciably, the project will have to be abandoned.

A Study of Biological Research Resources

The Ford Foundation, after long consideration, decided not to provide funding for this study. It is unclear where support for such an effort might be forthcoming.

Regulatory Aspects of Obtaining Plants and Animals from the Wild

Two related activities, outside the confines of the National Research Council, strongly indicate that for the time being this project should be held in abeyance. First, the Association of Systematics Collections seems now to be achieving such stability and effectiveness that, in a reasonable time, it can probably take care of many of the concerns that led to the proposal that the NRC undertake the study named above. Second, the Smithsonian Institution staff, with support from the National Science Foundation to the Society of Systematic Zoology, organized a Symposium on Impact of Federal Wildlife Regulations on the Systematics/Ecology Community. The symposium was held in the NAS auditorium on February 14 as a satellite meeting in connection with the 1978 meetings of the American Association for the Advancement of Science (AAAS) in Washington, D. C. Many of the topics of concern to the NRC were included on the agenda of this symposium.

Ecological Theory and Decision-Making

After the minisymposium reported in the Annual Report for 1976-1977, Gordon Orians and Gene Likens, both of the ALS, developed a more definitive statement, now entitled "Utility of Different Conceptual Models of Communities and Ecosystems." It has been proposed that a workshop of modest size be held in cooperation with the Environmental Studies Board and the Board on Agriculture and Renewable Resources. Both boards are in the Commission on Natural Resources, and have both studied the statement and have expressed willingness to participate in a joint venture. Support has been requested from the NAS Program Development Fund.

Amphibian Research Resources

This project could not be funded, and no further effort along these lines is contemplated in the near future.

Biological Education

This project was transferred, early in the reporting year, to the Division of Medical Sciences.

Cryobiology

A detailed proposal seeking support of a committee on cryobiology for an initial period of 3 years has been completed; funds will be sought from a variety of sources in the months ahead.

Systematics Resources in Entomology

A proposal seeking support for 2 years, during which detailed operating plans for a pilot regional systematics services center in entomology can be formulated, has been completed. The trial period itself is estimated to extend over about 5 years. The initial funds are to be sought from a variety of sources.

COMMITTEE ON AEROBIOLOGY

Summary Description: The Committee on Aerobiology emerged in response to interests developed during the years of the International Biological Program and has been focused internationally by the formation of an international association and of a commission in the Division of Environmental Biology of the International Union of Biological Sciences. The Committee hopes to bring a measure of coherence to various aspects of research, now loosely defined as "aerobiology," that are related to the movements and interrelationships of biologically significant components of the atmosphere.

Membership:

Robert L. Edmonds, Chairman
Donald Aylor
Sheldon G. Cohen
Robert L. Dimmick

Bruce F. Eldridge
Russell C. Schnell
Gabor Vali
Jack R. Wallin

Staff:

Veronica I. Pye

R. B. Stevens

Meetings:

August 11-12, 1977
December 4-5, 1977
March 28-29, 1978

(Boulder, CO)

Accomplishments: During the reporting year, the Committee completed its plan to solicit the views of a wide variety of interested specialists. At its August meeting, it heard from representatives of the Smithsonian Institution, the Harvard Medical School, the U.S. Department of State, the Office of Science and Technology Policy, and the National Science Foundation. In the course of the next two meetings, plans were laid for stimulating sessions on aerobiology at professional society meetings, for a half-day symposium in connection with a forthcoming AAAS meeting, for a proposed full-scale conference on aerobiology, and for one or more interdisciplinary workshops. It was recommended that the American Meteorological Society be encouraged to form an aerobiology committee. Finally, a questionnaire was prepared for distribution to the Committee's mailing list of 200-300 specialists asking for their views on the wisdom of forming a society for aerobiology and for information on their current or planned participation in the international association, their research emphases, and so on.

COMMITTEE ON BIOLOGY OF PEST SPECIES

Summary Description: The Committee was formed in 1973, in response to initiatives from society representatives to the Division of Biological Sciences, to assume responsibility for NRC activities in the biomedical aspects of research and development related to pests, broadly defined.

Membership:

Perry L. Adkisson, Chairman
Robert E. Frans
Andrew Gutierrez
Arthur Kelman
Richard Levins
John J. Magnuson

Jimmy K. Olson
Wendell L. Roelofs
James W. Truman
Rosmarie von Rümker
Frederic H. Wagner

Staff:

Veronica I. Pye

R. B. Stevens

Meetings: None

Accomplishments: The Committee was inactive during the reporting year, except for soliciting opinions from a number of professional societies as to the wisdom of preparing a sourcebook of information on economically important species that might be introduced into teaching and used as objects of basic biological research. Unless funding can be secured that permits the Committee to hold regular meetings and be supported by professional staff, it is unlikely to continue.

COMMITTEE ON GERMPLASM RESOURCES

Summary Description: The Committee was formed in 1976. It examined issues concerning germplasm resources, broadly defined, in order to summarize recent developments in this field and to assess the organizations and institutions that have embarked on related activities. This effort grew out of a number of diverse questions, requests, and expressions of concern, commencing before the formation of the Assembly, that demonstrated the extent to which living organisms, across the board, are in danger of being lost.

Membership:

Elizabeth S. Russell, Chairman
Barbara Bachmann
Kurt Benirschke
Robert W. Briggs
Richard H. Goodwin
Judith Grassle

Burke H. Judd
Charles F. Lewis
Peter Mazur
David L. Nanney
Thomas H. Roderick
David J. Rogers

Staff:

Veronica I Pye

R. B. Stevens

Meetings: None

Accomplishments: After very extensive editing and review, the report of this Committee, Conservation of Germplasm Resources--an Imperative, was published in April 1978, and the Committee was discharged.

COMMITTEE ON INDIGENOUS TROPICAL AGRICULTURAL ECOSYSTEMS

Summary Description: The Committee was formed to examine factors that have enabled some indigenous agroecosystems to persist so effectively for long periods. Multicropping, intercropping, soil fertility and its recovery, cultural practices, and religious beliefs that have contributed to the stability of the ecosystems were to be examined.

Membership:

H. Garrison Wilkes, Chairman
Herbert G. Baker

Jack R. Harlan

Staff:

Veronica I. Pye

R. B. Stevens

Meetings: None

Accomplishments: It has not proved possible, during the year, to secure funds for the proposed study; the Committee was therefore discharged.

COMMITTEE ON RESEARCH PRIORITIES IN TROPICAL BIOLOGY

Summary Description: The Committee was formed in November 1977 to undertake two related tasks: (1) to prepare an estimate of the rates of alteration of humid tropical forests in various sectors of the world, and (2) in light of the information gathered, to establish priorities for research that can be done in the time remaining and with the resources and manpower that can be mustered. This research will center on questions that can be answered only, or at least uniquely well, in the tropical forest ecosystem. A major workshop, with substantial participation by foreign scientists familiar with tropical biology, is to be held as part of the study.

Membership:

Peter Raven, Chairman
Peter S. Ashton
Gerardo Budowski
Arturo Gómez-Pompa
W. M. Lewis, Jr.
Harold Mooney

Gordon H. Orians
Harald Sioli
H. O'Reilly Sternberg
John J. Terborgh
Frank H. Wadsworth
Paul J. Zinke

Staff:

R. B. Stevens

Meeting:

March 18-19, 1978

(St. Louis, MO)

Accomplishments: The Committee has held its initial meeting and mapped its general schedule of activities for the year ahead.

FOOD AND NUTRITION BOARD

Summary Description: The Food and Nutrition Board (FNB) was formed as a Committee on Foods and Nutrition in what was then the Division of Biology and Agriculture in 1940. It soon became known as the Food and Nutrition Board and has continued by that name. A brief report published in 1965, The Food and Nutrition Board, 1940-1965--Twenty-five Years in Retrospect, summarizes the history of the Board and lists its membership for that period and reports published. The Board issues an annual activities report. Although the Board meets periodically to review the activities of its several committees and to plan for the future, most of the discrete studies are conducted by committees appointed for the specific tasks.

Membership:

Gilbert A. Leveille, Chairman
Roslyn B. Alfin-Slater
Charles E. Butterworth, Jr.
David B. Coursin
George K. Davis
R. Gaurth Hansen
Alfred E. Harper
Fredric W. Hill

David Kritchevsky
Sheldon Margen
Robert A. Neal
Robert O. Nesheim
Robert E. Olson
Willard B. Robinson
Irwin H. Rosenberg

Staff:

Myrtle L. Brown, Executive Secretary
Robert B. Bennett
Durward F. Dodgen

Kenneth R. Fulton
Margaret R. Stewart

Meetings:

September 15-16, 1977
December 7-8, 1977
February 22-23, 1978
April 13, 1978
June 12-14, 1978

(Atlantic City, NJ)
(Snowbird, UT)

Accomplishments: The activities of the FNB are reflected primarily in the accounts of its individual committees. However, a study of dietary guidelines research, funded by the National Institute of Arthritis, Metabolism, and Digestive Diseases was a specific project of the Board. The study examined research needs implicit in the report, Dietary Goals for the United States, issued by the U.S. Senate Select Committee on Nutrition and Human Needs.

The FNB was requested by the Consumer and Food Economics Institute of the Agricultural Research Service, U.S. Department of Agriculture (USDA), to identify information suitable as a base for developing dietary guidelines for the U.S. population and to make recommendations, when appropriate, concerning levels of consumption of specific nutrients and food components. Owing to internal considerations within the USDA, the project was not funded.

In June 1978, the FNB held a retreat to review the report of the Visiting Committee to the FNB, to rethink its mission, and to make short- and long-term plans for the future. The meeting was viewed as successful, and the Board voted to continue the annual retreat.

Committee on Clinical Nutrition

Summary Description: This Committee was established in November 1972.

It was given the task of preparing a handbook for the practicing physician to use in diagnosing and treating clinical conditions that are caused by nutritional problems or in which malnutrition plays a contributing or secondary role.

Membership:

Theodore B. Van Itallie, <u>Chairman</u>	Robert M. Kark
Charles E. Butterworth, Jr.	William J. Ganity
Stanley J. Dudrick	Harold H. Sandstead
Jules Hirsch	Hamilton Southworth
Howard N. Jacobson	

Staff:

Myrtle L. Brown

Meetings: None

Accomplishments: A final draft of the booklet, Clinical Nutrition: Guidelines for the Physician, has been reviewed by the FNB and the Assembly and is being revised on the basis of these reviews. It should be published in the spring of 1979, after which the Committee will be discharged.

Committee on Dietary Allowances

Summary Description: The Committee, formed in July 1974, is the most recent in a series of committees that have developed eight editions of Recommended Dietary Allowances (RDA), beginning in 1943. RDAs are the intakes of nutrients recommended to provide adequate nutrition for virtually all healthy persons in the United States. They are used in planning programs (such as school-lunch and the Women, Infants, and Children USDA programs), in food labeling, and in other regulatory programs.

Membership:

Hamish N. Munro, <u>Chairman</u>	Walter Mertz
John G. Bieri	George M. Owen
George M. Briggs	Roy M. Pitkin
C. E. Butterworth, Jr.	Howerde E. Sauberlich
Gilbert A. Leveille	

Staff:

Myrtle L. Brown

Meetings:

September 26-27, 1977	(Birmingham, AL)
December 15-16, 1977	(San Francisco, CA)
March 9-10, 1978	(Panel on Niacin to Tryptophan
May 18, 1978	Relation, Chicago, IL)
June 29, 1978	

Accomplishments: The draft of the ninth edition of Recommended Dietary Allowances is somewhat behind schedule, but should be ready for review by the FNB and ALS in the fall of 1978. The Committee organized a panel to review the efficiency of the conversion of tryptophan to niacin. This report will be incorporated into the revision of RDA. The Committee presented a Symposium on the New RDA at the annual meeting of the American Dietetic Association on September 26, 1978. The Committee's report, Human Vitamins B Requirements, was published during the year.

Committee on Food Consumption Patterns

Summary Description: The need for a study on changing food consumption patterns was first discussed by the FNB in 1972. After a planning period of several years, the Committee was established in January 1978. The Committee will examine the implications of changing food consumption patterns for nutrient intake and the possible impact on the health of the U.S. population and of special population subgroups. Initially, the Committee will evaluate the methods for obtaining food consumption information and determine where additional data or methods are needed.

Membership:

Robert O. Nesheim, Chairman
I. J. Abrams
Henry Blackburn
Doris H. Calloway

Helen A. Guthrie
Timothy M. Hammonds
Gail G. Harrison
Harold B. Houser

Staff:

Myrtle L. Brown
Kenneth R. Fulton

Margaret R. Stewart

Meetings:

February 8, 1978
April 10, 1978
June 14-15, 1978

(Berkeley, CA)
(Atlantic City, NJ)
(Salt Lake City, UT)

Accomplishments: The Committee has organized the project and made plans for three workshops. A Workshop on Aggregate Food Consumption Data will be held in Washington, D. C., on October 19-20, 1978. A Workshop on Evaluation of Methods for Obtaining Food Consumption Data, with emphasis on household and individual data, will be held in Washington, D. C. on November 8-10, 1978. A third workshop, on the the relationship between

food consumption patterns and indicators of nutrition and health status, is in the planning stages and is tentatively scheduled for the spring of 1979

Committee on Food Protection

Summary Description: At a meeting of the National Health Assembly in Washington in 1948, a resolution was adopted recommending that the Food and Nutrition Board undertake a study of some aspects of food safety. The FNB appointed an ad hoc committee to advise it on actions that should be taken. The Committee on Food Protection was established in 1950 and has been a major activity of the FNB ever since. In its concern with food safety, this Committee has conducted studies on food microbiology, nonnutritive sweeteners, toxicology, food technology, naturally occurring toxicants in foods, radionuclides in foods, specifications of identity and purity of food chemicals, and carcinogenic hazards. Specific tasks are customarily assigned to subcommittees established for that purpose.

Membership:

Paul M. Newberne, Chairman
Paul E. Kifer, Vice Chairman
Joseph F. Borzelleca
John Doull
Wendell W. Kilgore
James R. Kirk

Richard V. Lechowich
Sheldon D. Murphy
Stata Norton
Carl Vanderzant
Benjamin L. Van Duuren

Staff:

Margaret R. Stewart
Myrtle L. Brown

Robert B. Bennett
Durward F. Dodgen

Meetings:

August 31-September 1, 1977	(Woods Hole, MA)
November 3-4, 1977	(Kansas City, MO)
April 6-7, 1978	

Accomplishments: The Committee made preliminary plans for revisions of two of its earlier publications: Evaluating the Safety of Food Chemicals and Chemicals Used in Food Processing. Proposals for support were submitted to the Food and Drug Administration (FDA). Further action on the revisions is contingent on funding. The Committee is assisting in development of a program on food safety for the 1978 FNB annual meeting. Sponsorship of a 1-day Workshop on Possible Hazards from Chloro-Organic Compounds Formed in Foods

is under discussion. A report of progress in an NAS saccharin and food safety study was received. The Committee will keep informed of progress in the study and review drafts of Committee reports as requested.

Subcommittee on Codex Specifications

Summary Description: The Food Chemicals Codex (FCC) is a compendium of quality and purity standards for food additives. The project was initiated in 1961 by the Committee on Food Protection, whose Subcommittee on Codex Specifications now has immediate responsibility for the development and revision of the FCC. FCC I was published in 1966. The 1,039-page FCC II, published in 1972, provides specifications in monograph form for some 650 food additives, with analytical test procedures for determining compliance with the specifications. Current standards are revised, and new ones added, through the issuance of supplements between editions. The FDA, by regulatory action, has recognized the Codex specifications as establishing "food grade" quality. The Codex has also been adopted by Great Britain, Canada, New Zealand, and Australia. Codex standards have been adopted widely by the Joint FAO/WHO Expert Committee on Food Additives and by the Food Section of the International Union of Pure and Applied Chemistry. Approximately 7,500 copies of FCC II were in circulation as of June 30, 1978.

Membership:

Willard B. Robinson, Chairman
John C. Kirschman, Vice Chairman
Frank L. Boyd
James J. Broderick
Robert S. Bryant
Bruce H. Campbell
J. P. Fletcher
Edward O. Haenni

Hartley Howard
Thomas Medwick
Fred A. Morecombe
Ronald O. Read
Andrew J. Schmitz, Jr.
Gerald E. Stobby
Samuel M. Tuthill

Staff:

Durward F. Dodgen

Meeting:

November 30, 1977

Accomplishments: Work on the third supplement to FCC II is in progress; it should appear in late 1978 (the last supplement was issued in October 1975). Workshops related to specifications and analytical methods were held in Washington, D. C., on spice

oleoresins (November 1977), vitamin E (February 1978), polyethylene glycols (March 1978), activated carbon (June 1978), and carrageenan (June 1978). One of the major new subjects being investigated by the Subcommittee, after a workshop in November 1977, is microbiological criteria for food ingredients. Plans are being formulated for publication of FCC III in 1979.

Subcommittee on Food Microbiology

Summary Description: The Subcommittee, formed in 1965, is concerned with microbiological hazards in foods and their prevention. A core group, composed of microbiologists on the parent Committee, is augmented by additional members when a task is assigned to it. It is currently on standby basis.

Membership:

Charles F. Niven, Jr., Chairman
Richard V. Lechowich

Carl Vanderzant

Meeting:

November 29-30, 1977

Accomplishments: The Subcommittee worked with the Subcommittee on Codex Specifications in discussing the advisability of the establishment of microbiological standards for food ingredients. A proposal, "Microbiological Criteria for Food and Food Ingredients," was approved by the Assembly and the Governing Board. The study will be concerned with establishment of microbiological criteria particularly with respect to quality standards and the use of indirect criteria as indicators of food safety. Funding will be sought from the FDA, USDA, Department of Defense, and the Department of Commerce's National Marine Fisheries Service. When the project can be activated, the membership of the Subcommittee will be increased.

Subcommittee on Food Technology

Summary Description: The Subcommittee was formed in 1951. Food processing industries and food technologists seek ways of enhancing or stabilizing the nutritive value of processed foods, of improving and maintaining sensory appeal of their products, and of adding diversity to the food supply and convenience to the use of their products. Careful testing is necessary to determine the effects of chemical agents on various products or processes. Procedures must be devised for excluding unwanted residues of chemicals used in processing. Informed opinion is

essential to prevent premature, unwarranted, or possibly dangerous application of new technologies. The Subcommittee tries to ensure that these criteria are met.

Membership:

James R. Kirk, Chairman

Paul E. Kifer

Accomplishments: The Subcommittee is preparing for Committee consideration a statement of the need for and purpose of a 1-day Workshop on Possible Hazards from Chloro-Organic Compounds Formed in Foods. The report of the May 1977 Workshop on the Technology of the Fortification of Cereal-Grain Products was approved and submitted to the FDA.

Subcommittee on Toxicology

Summary Description: This Subcommittee continues on a standby basis, with reduced membership, when not engaged in carrying out a specific assignment. The Subcommittee was established in 1951. It has been authorized by the Assembly to review and assess the Food and Agriculture Organization (FAO/WHO) "tolerable weekly intakes" for mercury, lead, and cadmium. In so doing, the Subcommittee would evaluate the applicability and relevance of these guidelines for various sectors of the U.S. population and, if the guidelines turn out to be inappropriate, to modify them to fit U.S. needs.

Membership:

John Doull, Chairman
Joseph F. Borzelleca
Sheldon D. Murphy

Paul M. Newberne
Stata Norton
Benjamin L. Van Duuren

Accomplishments: Funding for the proposed project on tolerable weekly intakes for mercury, lead, and cadmium has not been obtained, and the project will be held in abeyance.

Committee on GRAS List Survey--Phase III

Summary Description: This study was initiated in May 1974 in response to a request from the FDA. President Nixon's 1969 consumer message contained a directive concerning the need to reevaluate the safety of substances added to foods that are Generally Recognized As Safe (GRAS). This effort began as a pilot study in 1970 (Phase I) and was advanced in 1971-1972 to a full-scale survey of the food industry on the extent to which the GRAS substances are used in foods (Phase II).

The continuing aims of the project during Phase III are to determine the concentrations at which regulated food and color additives (as opposed to the GRAS substances) are added to foods, the foods to which they are added, and the expected daily intake of each additive.

Membership:

Lloyd J. Filer, Jr., Chairman
Richard L. Hall, Vice Chairman
Owen R. Fennema
Dee M. Graham

Gilbert A. Leveille
Willard B. Robinson
Arthur T. Schramm
Bernard S. Schweigert

Staff:

Kenneth R. Fulton

Meetings:

August 29-30, 1977	(Woods Hole, MA)
November 14-15, 1977	
January 27-28, 1978	(Naples, FL)
April 17-18, 1978	
June 8-9, 1978	(Dallas, TX)

Accomplishments: Followups to the original Survey mailing were sent out in July and September, and the deadline for the receipt of most responses was the end of October. A final mailing was sent in November to determine the status of nonrespondents. During this period, the manufacturers of certified color blends and modified food starches submitted data on the composition of their products; these data will be matched against survey responses on the use of these substances.

The data submitted by all respondents were coded, machine processed, and edited; printouts of data submitted were returned to each company for verification. The data were then extensively reviewed by the Committee. Also in progress during this period were separate surveys of several special segments, including the brewing industry and manufacturers of chewing gum and hard candy.

Also during this period, the FDA requested that the Committee review data on the use of enzymes in food processing. The Committee has begun working on this survey.

Information was solicited concerning the 1975 poundage of GRAS substances reported in Phase II. These data were processed and reviewed by the Committee. Data were revised for a number of substances during this review.

The Committee's report on the estimation of daily intakes of caffeine was released in November 1977.

In addition to its work on the 1977 Food and Color Additives Survey (Phase III), the Committee is responsible for maintaining and reviewing the accuracy of the data collected during Phase II. Data on a number of these substances have been corrected after being reviewed with the respondents at the request of the FDA and the Federation of American Societies for Experimental Biology (FASEB).

Committee on International Nutrition Programs

Summary Description: This Committee, in existence for over a decade, is generally charged with studying overseas problems and activities in nutrition and providing scientific and technical advice as appropriate. Since May 1, 1970, the Committee has provided such advice to the Office of Nutrition, Agency for International Development (AID). Among other things, the Committee identifies nutritional problems and outlines programs for preventing or lessening malnutrition in less developed countries, reviews research and program proposals related to overseas nutrition projects, and develops position statements. The Committee convenes workshops or conferences or appoints ad hoc panels as required. In addition, there are two standing subcommittees, whose activities are described below.

Membership:

Sol H. Chafkin, Chairman
Jean-Pierre Habicht, Vice Chairman
James P. Carter
George K. Davis
James S. Dinning
George M. Foster, Jr.
Ruth L. Huenemann

Gerald T. Keusch
Jack Metcoff
James A. Olson
Giorgio R. Solimano
C. Peter Timmer
Barbara A. Underwood
Joe D. Wray

Staff:

Robert B. Bennett
Myrtle L. Brown

Meetings:

July 18-21

(Workshop on Functional
Definition of Nutritional
Status)

October 3-4, 1977
April 17-18, 1978

Accomplishments: The Committee has under review, or in various stages of preparation, statements or reports on:

- evaluation of protein quality
- nutrition in management of diarrheal disease in the community
- simplified dietary surveys
- international assistance for maternal and infant nutrition in developing countries
- effectiveness of amino acid fortification of cereal grains
- program development for intervention in the malnutrition-infection complex

It submitted its summary report on the Workshop on the Need for Research on Nutrition and Function to AID in March 1978.

Subcommittee on Interactions of Nutrition and Infection

Summary Description: This Subcommittee was formed in 1971 to give special attention to the concerns reflected in its title, within the general purview of the parent Committee. It also organizes workshops on an approximately annual basis.

Membership:

Gerald T. Keusch, Chairman
Michael Katz
Frederick T. Koster

Leonardo J. Mata
Irwin H. Rosenberg
Noel W. Solomons

Meetings:

August 18-19, 1977
February 25-26, 1978

(Quebec City, Quebec, Canada)
(New York City, NY)

Accomplishments: The Subcommittee has completed the manuscript for the proceedings of the Workshop on Effective Interventions to Reduce Infection in Malnourished Populations. A position paper based on the Workshop on Program Development for Intervention in the Malnutrition-Infection Complex is under review. The report, Impact of Infection on Nutritional Status of the Host, appeared in The American Journal of Clinical Nutrition.

Subcommittee on Nutrition and Fertility

Summary Description: The Subcommittee was formed in 1971 to give special attention to the concerns reflected in its title, within the general purview of the parent Committee. It undertakes special assignments from the parent Committee, particularly small conferences and workshops. Membership is restructured annually to fit the emphasis of the forthcoming meeting.

Membership:

Joe D. Wray, Chairman
James S. Dinning
Jean-Pierre Habicht

Ruth L. Huenemann
Jeanne Clare Ridley
John B. Stanbury

Meetings: None

Accomplishments: The proceedings of the Conference on Nutrition and Human Reproduction have been published and are available from Plenum Press. A new problem for the Subcommittee's attention is to be selected.

Committee on Nutrition and Dental Health

Summary Description: The chairman and first member of this Committee were appointed in early FY 1975 to review the general question of nutrition and dental health, with special reference to the role of foods and individual nutrients in tooth development; the role of foods, individual nutrients, and eating habits in dental caries; and the local and generalized effect of foods and nutrients on periodontal health.

Membership:

Juan M. Navia, Chairman

Abraham E. Nizel

Staff:

Myrtle L. Brown

Meetings: None

Accomplishments: An application was submitted to the National Institute of Dental Research for a grant to support the work of the Committee. It was approved, and funds were allocated as a conference grant without the inclusion of overhead. The grant was rejected by the NAS contract office, the project was abandoned, and the Committee was dismissed.

Committee on Nutrition, Brain Development, and Behavior

Summary Description: Formerly a subcommittee of the Committee on International Nutrition Programs, this unit became a committee in 1974. Its special purpose is to foster the scientific enterprise in this complex field.

Membership:

David B. Coursin, Chairman
Joseph Brozek
Joaquin Cravioto
Robert Klein
Merrill S. Read

Henry N. Ricciuti
Mark R. Rosenzweig
Myron Winick
Richard J. Wurtman

Staff:

Myrtle L. Brown

Meeting:

November 30-December 2,
1977

(International Symposium on
Behavioral Effects of Energy
and Protein Deficits)

Accomplishments: The Committee cosponsored an International Symposium on Behavioral Effects of Energy and Protein Deficits with the U.S.-Japan Malnutrition Program, U.S.-Japan Cooperative Medical Science Program on November 30-December 2, 1977. The proceedings are being edited for publication.

Committee on Nutrition of the Mother and Preschool Child

Summary Description: The Committee, formed in August 1974, resulted from restructuring and expanding of an earlier Committee on Maternal Nutrition. The Committee serves as an advisory resource for the Bureau of Community Health Services, Department of Health, Education, and Welfare (DHEW); thus its activities are directed toward improvement of nutritional aspects of maternity care and of the nutrition of infants and preschool children.

Membership:

Roy M. Pitkin, Chairman
Virginia A. Beal
Donald A. Cornely
Frank Falkner
Perry A. Henderson

Jalet C. King
Alvin M. Mauer
W. Ann Reynolds
William N. Spellacy
Isabelle Valadian

Staff:

Myrtle L. Brown

Meetings:

October 18, 1977
January 12, 1978
June 16, 1978

Accomplishments: A summary report of a major work, Laboratory Indices of Nutritional Status in Pregnancy, was published by Ross Laboratories for distribution to practicing obstetricians. Additional copies provided by Ross were distributed by the Bureau of Community Health Services and the FNB. A second printing was produced by the NAS Printing and Publishing Office to meet requests for the publication. The full publication has been published for sale.

A report of a Workshop on Fetal and Infant Nutrition and Susceptibility to Obesity was released in early 1977. The full report was published in the April 1978 issue of Nutrition Reviews.

The Committee has begun work on a project, "Nutrition Services in Perinatal Care," supported by the Bureau of Community Health Services and the National Foundation-March of Dimes.

An annotated bibliography on breastfeeding is in press.

Committee on Sodium-Restricted Diets

Summary Description: The Committee was organized in 1972 specifically to update and review the 1954 NAS publication, Sodium-Restricted Diets. The report will include basic information on physiological disposition of sodium, conditions in which sodium restriction and diuretics are used therapeutically, and practical aspects of planning sodium-restricted diets with or without concomitant diuretic therapy. It will also contain current information on the sodium content of processed foods, primarily on the basis of information provided through the Industry Liaison Panel of the FNB.

Membership:

George M. Owen, Chairman
Harold A. Kaminetzky
Herbert G. Langford

Harold H. Sandstead
Susan S. Schiffman

Staff:

Myrtle L. Brown

Meetings: None

Accomplishments: The final draft is under review. It is expected that the report will be published in early 1979.

INSTITUTE OF LABORATORY ANIMAL RESOURCES

Summary Description: The Institute of Laboratory Animal Resources (ILAR) was formed in 1952 as an element of the Division of Biology and Agriculture (which became the Division of Biological Sciences when the Assembly was established). It serves as a coordinating agency and a national and international resource for compilation and dissemination of information, promotion of education, planning and conduct of conferences, surveys of existing and required resources, and generally the upgrading of laboratory animal resources in the United States and abroad. The Institute has been a focal point for information on laboratory animals and a key advisory group in laboratory animal science. An important element in the ILAR effort to serve these functions is the quarterly journal, ILAR News.

The ILAR programs are planned and reviewed by a Council. Within the Council, there is an Executive Committee charged with more detailed supervisory responsibility. The Executive Committee meets about three times a year, the Council once. In addition to active study committees, ILAR conducts a program of conferences, symposia, and workshops and supports a substantial staff activity.

Membership (Council):

Edward C. Melby, Jr., Chairman*
W. Jean Dodds, Vice Chairman*
John G. Adams
Nancy J. Alexander
Kurt Benirschke*
Nicholas G. Bottiglieri
August Epple*
Bruce H. Ewald
Kenneth C. Hayes

J. Russell Lindsey*
Patrick J. Manning
Donald F. Patterson
Theodore H. Reed
Sam H. Ridgway
Daniel H. Ringler*
Allan M. Schrier
Richard O. Spertzel
Robert A. Whitney, Jr.*

*Member of ILAR Executive Committee.

Staff:

Earl W. Grogan, Executive Secretary
Samuel Abramson
Andrea L. Cohen

Dorothy D. Greenhouse
Nancy A. Muckenhirn

Meetings:

November 28, 1977	(Executive Committee)
January 9-10, 1978	(Council)
April 21, 1978	(Executive Committee)
April 25-26, 1978	(Panel on the Laboratory Animal Data Bank)

Accomplishments: The ILAR Executive Committee met two times during FY 1978, the Council once. At these meetings, the budgetary requirements and ILAR committee activities were discussed. Other matters reviewed included the status of ILAR publications, sponsorship of symposia and workshops, current and pending legislation affecting laboratory animal resources, nominations to ILAR committees for FY 1979, evaluation of Laboratory Animal Data Bank, development and revision of the guideline documents, and status of ILAR information services.

In response to a request from the National Library of Medicine (NLM), the Executive Committee initiated a review and evaluation of the Laboratory Animal Data Bank as it approached the end of its third year of development by Battelle Columbus Laboratories under contract with the NLM. This evaluation, broader in scope than the work of the ILAR Committee on Laboratory Animal Data, is being conducted by the Executive Committee through a Panel on the Laboratory Animal Data Bank. A report has been drafted, is being reviewed, and is expected to be completed in July 1978.

The ILAR offices serve as an information center on various aspects of laboratory animal science and answered numerous inquiries on laboratory animal topics. During FY 1978, approximately 15,000 copies of ILAR reports were distributed.

An important element in the ILAR effort to serve as a coordinating and focal response for development and distribution of guidelines and information pertaining to laboratory animals and their care and use is the Institute's quarterly journal, ILAR News, prepared by the staff. This publication has been published continuously since its first issue in October 1957, and currently is distributed without charge to large numbers

of investigators and institutions throughout the United States and in 57 foreign countries. In recent years, its mailing list has included several thousand addresses.

ILAR News frequently includes reports by ILAR committees on various aspects of laboratory animal science. Its typical content includes news (including programs) concerning future and past local, national, and international meetings of interest to its readers; various types of announcements; general news; NAS-NRC news and reports; references on animal models for biomedical research arranged by anatomic systems and disease categories; book reviews; technical notes; articles of interest (such as "Congenital Defects of Wild and Zoo Mammals" and "First International Registry of Animal Models of Thrombosis and Hemorrhagic Diseases"); notices of availability of special animals, organs, and tissues; requests for special animal models; proposed and established federal regulations; lists of reference material available (for sale by NRC, as well as free of charge from ILAR); requests for information; new books available; and miscellaneous information of interest to a variety of persons and organizations involved with laboratory animals.

Staff members assisted foreign visitors, made occasional site visits on request, addressed groups interested in the laboratory animal field, and cooperated with other organizations to improve laboratory animal facilities and care.

ILAR provides--through conferences, symposia, and workshops--a forum for the discussion of important laboratory animal problems. Past conferences and workshops dealt with animal standardization and accreditation, primate resources, procurement of animals from natural populations, inbred mouse production and cell culture, research animal housing, gnotobiotic technology, diseases of laboratory animals potentially hazardous to man, animal technician training, graduate education in laboratory animal medicine, and molluscan pathology.

The conference program cosponsored two seminar sessions at the November 1976 meeting of the American Association for Laboratory Animal Science. The first, involving five participants, dealt with social and behavioral correlates of successful breeding in nonhuman primate colonies. The second, with four speakers, focused on the hematology of laboratory animals. Proceedings of the first seminar were published in Laboratory Animal Science in August 1977. Proceedings of the second seminar are expected to be published in the same journal.

The Northeastern Research Center for Wildlife Diseases, the Registry of Comparative Pathology of the Armed Forces Institute of Pathology, and ILAR cosponsored a Symposium on Pathobiological Effects of Environmental Pollutants: Animal Models and

Wildlife as Monitors, on June 1-3, 1977. The symposium focused on the potential usefulness of wildlife species as animal models in monitoring environmental pollutants and as comparative models or alternatives to traditional laboratory animal species. The proceedings are being edited and will be submitted to the NAS Office of Publications for publication.

Two ILAR committees, whose terms expired June 30, 1976, were not continued into FY 1977, although processing of their reports continued. The report of the Committee on Birds, Laboratory Animal Management: Wild Birds, was published in August 1977. The final, reviewed manuscript of the Committee on Cats, Laboratory Animal Management: Cats, will be published in early FY 1979.

Committee on Animal Models and Genetic Stocks

Summary Description: The establishment of the Committee in July 1969 was stimulated by a resolution adopted by the Genetics Society of America and encouragement from the National Institutes of Health. Its purpose is to collect, maintain, and disseminate information on suppliers and biomedical uses of animal models and genetic stocks.

Membership:

W. Jean Dodds, Chairman
Robert S. Anderson
Edwin J. Andrews
Robert W. Bull

George A. Padgett
Peter K. T. Pang
Donald C. Shreffler
William H. Stone

Staff:

Nancy A. Luckenhirn

Meeting:

October 27-28, 1977

Accomplishments: The Committee continued to advise ILAR staff in locating sources of animal models and genetic stocks, identifying needed animal models, and revising locator files so that this information would be available to scientists seeking a particular species or genetically characterized stock. These tasks were accomplished through staff work to collect, store, and disseminate such data as key references and major characteristics pertaining to a given animal model or genetic stock and

names and addresses of supply sources, animal colonies, and scientific consultants knowledgeable on animal model topics. Information was made available to interested scientists in ILAR News and by direct response to specific inquiries. Committee members and staff attended and participated in meetings and symposia of other groups investigating topics related to animal models and genetic stocks and identified timely subjects for symposia and workshops on various animal model topics.

During 1977, staff of the Animal Models and Genetic Stocks Program responded to 411 inquiries. The exhibit, "Animal Models: Contributions to Understanding of Human Diseases," was displayed at meetings of FASEB, the American Association for Laboratory Animal Science, and the Association of Military Surgeons of the United States. A new panel describing progress in the development of animal models of gangliosidoses was prepared by the Committee in cooperation with the Registry of Comparative Pathology. The revised exhibit is entitled "Animal Models of Human Disease." The Committee held a joint meeting with the Registry of Comparative Pathology of AFIP on October 28, 1977, to exchange information on activities and to discuss progress on joint projects, including the exhibit and the Symposium on Pathobiological Effects of Environmental Pollutants: Animal Models and Wildlife as Monitors, mentioned earlier.

Committee on Animal Models for Research on Aging

Summary Description: This Committee was established on September 30, 1977, in response to a request from the National Institute on Aging (NIA), to assemble and review data on the relevance and appropriateness of selected small vertebrates as animal models for research on aging. A steering committee and five subcommittees were formed to conduct the study.

Membership:

Bennett Cohen, Chairman
Richard C. Adelman
Douglas M. Bowden
Carel F. Hollander

Leah M. Lowenstein
Takashi Makinodan
Roger McClellan
Henryk M. Wisniewski

Subcommittee on Carnivores:

Roger McClellan, Chairman
Henry J. Baker
Robert W. Bull
Harold W. Casey

Webster S. S. Jee
Joe L. Mauderly
Robert Lee Pyle

Subcommittee on Lagomorphs and Rodents other than Rats and Mice:

Carel F. Hollander, Chairman
Joe D. Burek
Richard R. Fox

Alan L. Kraus
George A. Sacher
Albert L. Vincent

Subcommittte on Mice:

Takashi Makinodan, Chairman
Harold H. Draper
James F. Florini
David Harrison

Howard J. Hoffman
J. Michael Holland
Louis J. Serrano
Richard L. Sprott

Subcommittee on Nonhuman Primates:

Douglas M. Bowden, Chairman
Irwin S. Bernstein
Thomas B. Clarkson
Donna Cohen
Andrew G. Hendrickx

Robert W. Prichard
Peter S. Rodman
William H. Stone
Henryk M. Wisniewski

Subcommittee on Rats:

Richard C. Adelman, Chairman
Miriam R. Anver
Merrill F. Elias
Philip W. Landfield

Edward J. Masoro
Joseph Meites
Jay Roberts

Staff:

Dorothy D. Greenhouse

Meetings:

February 26-27, 1978
June 19, 1978

(Subcommittee on Lagomorphs
and Rodents other than Rats
and Mice)

Accomplishments: A scope of work has been developed. Each subcommittee will select and address key issues in gerontological research; discuss the advantages and limitations of various stocks, strains, or breeds as animal models of these issues; compare and contrast each species with other species as animal models; and recommend ways to use each species to maximize availability and minimize cost. A format for the final manuscript has been proposed and is under review by each subcommittee. The Committee expects to complete its work in September 1979.

Committee on Animal Models of Fertility and Contraception

Summary Description: In early 1977, the Executive Committee of ILAR organized a task force that developed a recommendation for a symposium. During 1977, a contract proposal was submitted to the Program for Applied Research in Fertility Regulation (PARFR) of Northwestern University, which funded the symposium. A committee was formed that made detailed plans for a meeting that would provide interaction among investigators carrying out studies related to fertility and contraception. The program emphasized comparative studies, with descriptions of species peculiarities that make them particularly suitable for certain studies.

Membership:

Nancy J. Alexander, Chairman
Don Wayne Fawcett
Michael J. Free
Gilbert S. Greenwald

Edward Mather
Dolores J. Patanelli
Sheldon J. Segal

Staff:

Nancy A. Muckenhirn

Meetings:

September 9, 1977
May 7-10, 1978

Accomplishments: An organizing meeting was held on September 9, 1977, and the symposium was held on May 9-10, 1978. Fifty participants discussed a variety of topics during the two-and-one-half day program that included both speakers and poster sessions. Session chairmen discussed edited manuscripts with individual authors at the meeting. Advance submission and editing of manuscripts allowed the proceedings to be compiled directly after the meeting and submitted for review. The final report is expected to be submitted in early FY 1979 to PARFR, the funding organization, which plans to have the proceedings published by Harper and Row, Inc.

Committee on Care and Use of Laboratory Animals

Summary Description: This Committee was established in 1965 (as the Committee on Revision of the Guide for Laboratory Animal Facilities and Care) in response to a request from the National Institutes of Health to recommend guidelines to assist scientific institutions

in providing professional care for laboratory animals. The resulting guidelines are based on scientific principles, expert opinion, and experience with methods and practices that have proved to be consistent with high-quality animal care.

Membership:

Alvin F. Moreland, Chairman
W. Emmett Barkley
Nicholas G. Bottiglieri
C. Max Lang
Patrick J. Manning

Paul M. Newberne
Steven P. Pakes
Daniel H. Ringler
Steven H. Weisbroth

Staff:

Samuel Abramson

Meetings: None

Accomplishments: Guide for the Care and Use of Laboratory Animals was revised by the Committee in 1968 and 1972, and the 1972 revision was reprinted in 1974 with one added statement. In all, more than 180,000 copies have been distributed since it was published and it has become a primary reference on animal care in scientific institutions. The Committee receives and reviews changes to the Guide as recommended by users of laboratory animals. The Committee reviewed the current Guide and recommended that it be revised during FY 1977. The Committee, whose membership had increased to nine persons, completed the revision during 1977, and the manuscript was submitted on March 23, 1978, to the National Institutes of Health for publication by the Government Printing Office. The Committee has been discharged.

Committee on Conservation of Laboratory Animals

Summary Description: As one outcome of the Symposium on the Future of Animals, Cells, Models, and Systems, the ILAR Executive Committee determined that it would be advisable to establish a small, continuing committee charged with remaining alert to present and emerging alternatives to the use of animals in biomedical research and to ways in which animals might be used conservatively. This move responds to increasing shortages of animals of some types and to other issues raised at the symposium. At least once a year, the Committee will report to the ILAR Executive Committee on the current state of these matters and propose special studies or related activities as appropriate.

Membership:

Dante G. Scarpelli, Chairman
Carol M. Newton

Herbert S. Rosenkranz

Staff:

Earl W. Grogan

Meetings: None

Accomplishments: Numerous publications relevant to conservation of laboratory animals were referred by the staff to the Committee during the year to maintain awareness of developments in the field, as well as attitudes of the scientific community, various organizations, and the public on these issues.

Committee on Education

Summary Description: The ILAR Executive Committee, at its February 1976 meeting, reached a consensus that the 1971 pamphlet, Guide to Post-doctoral Education in Laboratory Animal Medicine, should be revised and updated. A committee of five members was appointed to undertake this assignment and was also asked to seek information on the needs for manpower and training in laboratory animal medicine.

Membership:

Bennett J. Cohen, Chairman
Henry J. Baker, Jr.
W. Jean Dodds

Jack Hessler
Albert E. New

Staff:

Earl W. Grogan

Meeting:

November 18, 1978

Accomplishments: The Committee has developed a revised report, Laboratory Animal Medicine: Guidelines for Education and Training, which has been approved for publication and is expected to be published by the Printing and Publishing Office in the fall of 1978.

With regard to manpower and training needs, liaison was conducted with the Commission on Human Resources and the ALS Committee on Veterinary Medical Sciences, which also have or are planning programs to consider manpower and training needs.

Committee on Genetics

Summary Description: Established September 1, 1975, this Committee is revising the 1969 publication, A Guide to Genetic Standards for Laboratory Animals. The Committee will emphasize the importance of the specific characterization of experimental animals and discuss mating systems of inbred, outbred, and mutant strains that have been used increasingly during the last 5 years.

Membership:

Herman B. Chase, Chairman
E. John Ainsworth
Eva M. Eicher

Larry E. Mobraaten
Willys K. Silvers

Staff:

Nancy A. Muckenhirn

Meetings: None

Accomplishments: The report, Laboratory Animal Management: Genetics, is expected to be completed in 1978 and published in 1979.

Committee on Histologic Classification of Laboratory Animal Tumors

Summary Description: Established September 1, 1975, this Committee is charged with the development and promotion of worldwide standardization of histologic tumor classification in laboratory animals comparable with that now available for human neoplasms. The frequency and nature of tumors in body sites differ markedly among species, breeds, and regions. The histologic terminology applied to these pathological lesions is used loosely. In much of the literature, it is not clear whether investigators in different laboratories are observing the same tumors or whether uniform nomenclature is being used to describe similar tumors in different species.

Membership:

Robert A. Squire, Co-chairman
Harold L. Stewart, Co-chairman
Harold A. Casey

Edwin D. Murphy
Svend W. Nielsen
Mearl F. Stanton

Staff:

Samuel Abramson

Meeting:

February 28, 1978

Accomplishments: At its initial meeting in September 1976, the Committee discussed the priority of needs in relation to its charge and recommended that rat liver tumors should be studied first through appointment of a subcommittee. At its February 1978 meeting, the Committee reviewed and approved the draft document prepared by the Subcommittee on Rat Liver Tumors, after making a series of suggestions for improvement of the manuscript for consideration by the author group. It also recommended continuation of efforts to develop a series of companion publications that would deal with tumors of appropriate organs or systems in selected laboratory animals. Toward this end, the Committee identified lung tumors of mice and bladder tumors of rats as warranting early attention through appointment of ILAR subcommittees of experts on these subjects. Topics identified for later attention include mammary and skin tumors of mice and mammary tumors of rats.

Subcommittee on Rat Liver Tumors

Summary Description: The Subcommittee was established in December 1976 on the recommendation of the Committee on Histologic Classification of Laboratory Animal Tumors. The Subcommittee was charged to formulate a tentative histologic classification and nomenclature of tumors and associated lesions that occur in the rat liver.

Membership:

Harold L. Stewart, Co-chairman
Gary M. Williams, Co-chairman
C. Hans Keysser

Louise S. Lombard
Richard J. Montali

Staff:

Samuel Abramson

Meetings:

July 8, 1977
August 18, 1977
September 16, 1977
October 18-19, 1977
November 29-30, 1977
January 17-18, 1978
February 22, 1978
May 3-4, 1978
May 23, 1978
June 13, 1978

Accomplishments: The Subcommittee has developed a draft report, Histologic Typing of Liver Tumors in the Rat, that includes benign and malignant tumors, associated lesions, and related phenomena, with pertinent references. The material covered in the draft is illustrated by color photographs of histologic sections. The draft was reviewed and approved by a peer group of pathologists, who applied the classification to microscopic slides of rat liver tumors in their personal collections. After final approval of the edited version of the manuscript and formal review and approval by the Assembly, it is proposed to submit the document to the Journal of the National Cancer Institute.

Committee on Laboratory Animal Data

Summary Description: Established June 1, 1976, this Committee provides scientific advice to the National Library of Medicine (NLM) Laboratory Animal Data Bank (LADB), which is being developed under contract with Battelle Memorial Institute in Columbus, Ohio. The Committee meets periodically, reviews the progress of data accumulation and processing, and evaluates the reliability of the data and their scientific worth to the research community. Reports from the Committee deal with computer systems as used in the program, biostatistics, storage and retrieval of on-line information in pathology, genetics, natural incidence of disease, neoplasms, longevity, experimental protocols, and husbandry techniques.

Membership:

Bernard F. Trum, Chairman
Edwin J. Andrews
August Epple
Joseph J. Knapka

Donald A. Lindberg
Walter F. Loeb
James E. Womack

Staff:

Earl W. Grogan

Meeting:

January 30-31, 1978

(Bethesda, MD)

Accomplishments: The NLM and Battelle Institute briefed the Committee, demonstrated the developing computerized LADB through television and printout circuits, and discussed problems. The Committee responded by offering comments, evaluation, and recommendations in the form of a written report. Selected Committee members continued to participate in testing of the system at remote locations, to evaluate its practical value for the intended purposes. Representatives from the Committee

participated as members of the ILAR Panel on the Laboratory Animal Data Bank in the conduct of a more comprehensive evaluation of the LADB for the ILAR Executive Committee.

Committee on Laboratory Animal Diets

Summary Description: This Committee was established September 1, 1975, to provide guidance to research investigators on dietary control and documentation in the conduct of research and testing with laboratory animals. This information supplements that already available in reports prepared by the Committee on Animal Nutrition of the Commission on Natural Resources.

Membership:

Paul M. Newberne, Chairman
John G. Bieri

George M. Briggs
Malden C. Nestlein

Staff:

Earl W. Grogan

Meetings: None

Accomplishments: The Committee has reviewed nutrition sections of ILAR draft reports on laboratory animal management. The Committee report, Control of Diets in Laboratory Animal Experimentation, was published in the winter-spring 1978 issue of ILAR News. The Committee was discharged on May 2, 1978.

Committee on Laboratory Animal Facilities and Resources

Summary Description: This Committee was formed in April 1977 to organize a national survey of laboratory animal facilities and resources supporting biomedical research. It will use to the extent practicable the survey instrument used in 1967, the results of which were published in 1970.

Membership:

C. Max Lang, Chairman
John G. Adams
Emerson L. Besch
Richard R. Fox

Robert R. Jorgensen
William A. Knapp, Jr.
James R. Pick, Jr.
Stefano Vivona

Staff:

Samuel Abramson

Meetings:

September 26, 1977

November 4, 1977

March 8, 1978

Accomplishments: The Committee has developed a final survey instrument, in the form of a comprehensive questionnaire, for use in the conduct of a national survey designed to gather objective data on the current status of laboratory animal facilities and resources, on unfilled needs, and future needs. The questionnaire has been pretested at nine institutions representing a cross section of the institutions to be surveyed throughout the United States. The responses of these pre-test institutions and suggestions from a dozen government and private agencies and institutions that examined the draft questionnaire were used to develop the final document. The U.S. Office of Management and Budget has officially approved the questionnaire, and a comprehensive up-to-date mailing list has been developed to ensure an "entire universe" sample for the national inventory of laboratory animal facilities and resources. It is anticipated that the survey will be completed and a report prepared for publication in 1979.

Committee on Laboratory Animal Housing

Summary Description: This Committee was formed on September 1, 1975, to plan and organize a symposium on laboratory animal housing that would re-examine many of the issues considered in a 1963 publication by ILAR and extend the examination to new subjects. The increasingly constrained availability of laboratory animal resources and the more insistent demands for high-quality research animals make it essential that housing considerations be critically examined.

Membership:

Emerson L. Besch, Chairman
Henry L. Foster
S. James Goldstein
Albert M. Jonas

C. Max Lang
J. Russell Lindsey
Alvin F. Moreland
Donald L. Riley

Staff:

Earl W. Grogan

Dorothy D. Greenhouse

Meetings: None

Accomplishments: The symposium at Hunt Valley, held on September 22-23, 1976, summarized information and updated criteria for various facets of laboratory animal housing. Included were considerations of animal room design, construction materials, hazard containment, waste disposal, caging, service equipment, and energy conservation. Participants and attendees included laboratory animal scientists, engineers, architects, research administrators, and laboratory animal care personnel. Proceedings of the symposium are in press and are expected to be published by the NAS in the fall of 1978. The Committee was discharged on June 8, 1978.

Committee on Laboratory Animal Records

Summary Description: This Committee was formed in April 1977 to develop a standardized animal record system for nonhuman primate breeding colonies.

Membership:

Arthur S. Hall, Chairman
Norman H. Altman
Charles H. Frith
Roy V. Henrickson
Noel D. M. Lehner

Walter F. Loeb
Howard Moraff
Wendell C. Peacock
Gene P. Sackett
U. S. Seal

Staff:

Nancy A. Muckenhirn

Meetings:

July 25-26, 1977
December 1-2, 1977

Accomplishments: The Committee met twice during 1977 to discuss draft manuscripts, develop record forms, and evaluate responses from field tests at institutions with both computerized and manual record systems. The report is expected to be completed during 1978 and published in 1979.

Committee on Marine Invertebrates

Summary Description: The Committee was established in 1976 in response to a recommendation of a task force that met on January 28, 1976. The Committee will write a manual for the laboratory management of marine invertebrates.

Membership:

Ralph Hinegardner, Chairman
James W. Atz
Rimmon C. Fay
Milton Fingerman

Robert K. Josephson
Norman A. Meinkoth
John W. Miller, Jr.
Mary Esther Rice

Staff:

Nancy A. Muckenhirn

Meeting:

August 26, 1977

Accomplishments: The Committee assembled and reviewed sections of its draft report, Laboratory Animal Management: Marine Invertebrates, at a meeting on August 26, 1977. It also assessed the work remaining to be done. The maintenance of artificial seawater systems and species-specific guidelines are being emphasized in the document. The report is expected to be completed during 1978 and published in 1979.

Committee on Nonhuman Primates

Summary Description: This Committee was organized in March 1970 (as the Committee on Conservation of Nonhuman Primates) in response to requests from the National Institutes of Health and the Department of Defense, to examine the effects of habitat change on wild populations and the needs for breeding programs to ensure the continued availability of nonhuman primates for biomedical programs. The Committee reviews data on scientific use and breeding and management programs. The membership and scope of the Committee have been enlarged by the establishment of four subcommittees.

Membership:

Allan M. Schrier, Chairman
Herman B. Chase
John F. Eisenberg
William J. Goodwin
Noel D. M. Lehner

Patrick J. Manning
Thelma E. Rowell
James H. Vickers
Carolyn Crockett Wilson

Subcommittee on Care and Use:

Patrick J. Manning, Chairman
Francis C. Cadigan, Jr.
Edward J. Goldsmith
Kenneth C. Hayes

Bernard F. Trum
James H. Vickers
Robert A. Whitney, Jr.

Subcommittee on Conservation of Natural Populations:

John F. Eisenberg, Chairman
Theodore H. Fleming
Thelma E. Rowell

Richard W. Thorington, Jr.
Carolyn Crockett Wilson

Subcommittee on Genetics and Breeding:

Noel D. M. Lehner, Chairman

Herman B. Chase

Subcommittee on Requirements:

William J. Goodwin, Chairman

Carlyn Crockett Wilson

Staff:

Nancy A. Muckenhirn

Meetings: None

Accomplishments: The Committee prepared a letter of comments on the National Primate Plan developed by the Interagency Primate Steering Committee of the National Institutes of Health during a public response period. The Subcommittee on Care and Use is updating the 1973 publication, Standards and Guidelines for the Breeding, Care, and Management of Laboratory Animals: Nonhuman Primates. The revised document is expected to be published during 1979. In 1977, the Subcommittee on Conservation of Natural Populations prepared a plan for manuals for training biologists to survey mammalian populations in the tropics. A plan has also been developed to augment the Subcommittee on Requirements and to assess needs for primates, by discipline, in the light of decreasing importation of primates and increasing captive breeding of some species.

U.S. NATIONAL COMMITTEES

U.S. National Committee for Photobiology (USNC/Photobiology)

Summary Description: A Committee on Photobiology was formed in the early 1950s to promote photobiology as a scientific discipline and to serve as a focus of interaction with the Comité International de Photobiologie (CIP), a commission of the International Union of Biological Sciences. CIP, renamed the Association Internationale de Photobiologie (AIP) in 1976, has sponsored a long series of international photobiology congresses at 4-year intervals. In 1972, the Committee on Photobiology was reformed as a USNC for Photobiology after having taken a leading role

in the establishment of the American Society for Photobiology, which is concerned primarily with photobiology as a science. It performs the usual functions of a U.S. National Committee by providing liaison between U.S. scientists and international activities in this field. It is composed of 12 members, nominated by the Committee and a number of professional biological societies.

Membership:

James W. Longworth, Chairman
Elwood D. Bickford
Martyn M. Caldwell
Roderick Clayton
John H. Epstein
Leonard I. Grosswiener
Andre T. Jagendorf
John Jagger

Lois M. Hamerman Johnson
John W. Lee
Werner K. Noell
Betsy Sutherland

Ex officio
Frederick Urbach

Staff:

Samuel B. McKee

Meeting:

February 16, 1978

Accomplishments:

The Committee discussed, with officials of the National Institute of Environmental Health Sciences, a proposed US-USSR joint research project on the effects of ultraviolet radiation on human health. Research topics and potential participants were reviewed.

The USNC recommended that the NAS organize a travel grants program for the VIII International Photobiology Congress to be held in Strasbourg, France, on July 20-25, 1980. The American Society for Photobiology was asked to assist in stimulating American participation by advertising the Congress.

The Committee reviewed the AIP in response to a request from the Commission on International Relations Board on International Organizations and Programs. The AIP, operating on a minimal budget, was thought to have successfully organized a series of photobiology congresses and occasional symposia. Therefore, additional effort and expense did not seem necessary.

At the request of the Committee, Dr. Praeger, Office of Science and Technology Policy, reviewed efforts to locate funding for a government-sponsored program of research known as the Biological and Climatic Effects Research Program.

U.S. National Committee for the International
Union of Biological Sciences (USNC/IUBS)

Summary Description: The Committee was organized in the early 1920s in the interests of U.S. participation in nongovernment biological activities and to ensure effective U.S. involvement in IUBS programs. It advises the NAS on matters pertaining to IUBS, nominates delegates to IUBS General Assemblies, provides information and guidance for delegates to the General Assemblies and other international activities of significance to the biological sciences, and performs other duties generally expected from national committees of adhering countries under IUBS statutes. It is composed of 15 members, about half of whom represent the botanical and half the zoological sciences.

Membership:

Rita Colwell, Chairman
Walter J. Bock, Vice Chairman
Peter Raven, Secretary
Harlan P. Banks
Robert H. Burris
Vincent D. Dethier
Philipp Gerhardt
Frank B. Golley
Aubrey Gorbman

Jerry Hirsch
John A. Moore
Oliver E. Nelson, Jr.
Otto T. Solbrig
Peter H. von Hippel

Ex officio
Edward S. Ayensu

Staff:

Samuel B. McKee

Meeting:

January 5, 1978

Accomplishments: In response to the questionnaire from the Board on International Organizations and Programs, the USNC reviewed the purposes and accomplishments of IUBS. The USNC concluded that IUBS was generally successful in stimulating and coordinating international communication in biology. The structure of IUBS, a cluster of a few dozen autonomous international associations, reflected the diversity of biology.

The Committee endorsed the symposium proposed by the Association of Systematics Collections on the importation of biological specimens. The USNC/IUBS offered to review the recommendations of the symposium for preparation of resolutions for adoption at the 1979 General Assembly of IUBS.

The Division of Microbiology of IUBS is based on the International Association of Microbiology Societies (IAMS). For some years, IAMS has considered the possibility of withdrawing from IUBS and establishing an independent existence, perhaps membership within the International Council of Scientific Unions. IAMS is the only autonomous international organization on which an IUBS Division is based. The USNC/IUBS recommended that the statutes of IUBS be modified to reflect the true status of IAMS.

The Committee recommended that NAS organize a travel grants program for the XVII International Ornithological Congress. The USNC noted that the NAS organizes about one travel grants program per year, whereas IUBS sponsors about a dozen meetings per year. The Committee recommended that the NAS organize travel grants programs for IUBS meetings only in extenuating circumstances.

Subcommittee on Travel Grants, USNC/IUBS

Summary Description: The Subcommittee was established in 1978 to review travel grant applications from U.S. scientists wishing to attend the XVII International Ornithological Congress in Berlin, Germany.

Membership:

Walter J. Bock, Chairman

Frank B. Gill

Staff:

Samuel B. McKee

Meetings: None (the Subcommittee carried out its screening by mail)

Accomplishments: Thirty applications for travel grants were received, and the available funds supported 10 applicants.

U.S. National Committee for the International Union of Nutritional Sciences (USNC/IUNS)

Summary Description: The Committee was established in 1957 as a focal point for interaction between the U.S. scientific community and the International Union of Nutritional Sciences. It performs functions typical of USNCs in advising the NAS on matters related to U.S. participation in IUNS, nominating delegates to international meetings sponsored by IUNS, and directing attention to nutrition research that requires international cooperation. Its nine members are nominated

by the Council of the American Institute of Nutrition (AIN) in coordination with the Council of the American Society for Clinical Nutrition. It maintains close liaison with the activities of the Committee on International Nutrition Programs of the Food and Nutrition Board.

Membership:

George K. Davis, Chairman
Roslyn B. Alfin-Slater, Vice Chairman
E. T. Mertz, Secretary
George G. Graham
Alfred E. Harper
Kendall W. King
Michael C. Latham

James A. Olson
Ruth L. Pike

Ex officio
LaVell Henderson
Gilbert A. Leveille
Nevin S. Scrimshaw

Staff:

Samuel B. McKee

Meetings:

November 22, 1977
April 12, 1978

(Atlantic City, NJ,
jointly with the Organizing
Committee for the XII
International Nutrition
Congress)

Accomplishments: The Committee asked AIN to stimulate U.S. participation in the XI International Nutrition Congress by organizing a travel grant program and arranging reduced-fare flights. As in the previous year, assistance was provided to the Organizing Committee in establishing the scientific program.

By unanimous decision, the Committee nominated Nevin Scrimshaw to be president of IUNS. In addition, the USNC proposed nominees for the other officers and Council members. George K. Davis was elected the NAS member of the IUNS nominating committee.

The USNC requested that the NAS participate in a search for funds to support an "office of the president" for the anticipated U.S. President of IUNS. The office, traditionally supported from national sources, would stimulate IUNS activities and assist the President. AIN was to participate in the search for funds.

Two items were proposed for the agenda of the General Assembly to be held coincidentally with the XI International Nutrition Congress, August 1978, in Rio de Janeiro. The first item asks for a change in

procedure to designate host countries two congresses in advance, so that organizing committees will have adequate time to raise funds and plan the scientific program. The second requests a discussion of the IUNS dues income in relation to its activities, because its activities have received large amounts of money from U.S. Public Law 480 funds. Some persons seem to resent the apparent U.S. influence attendant on the use of PL 480 funds. Also, such funding may no longer be available, and a search for alternative sources should begin.

The Committee continued to assist the Organizing Committee for the XII International Nutrition Congress planned for San Diego in 1981.

Committee members responded to the questionnaire from the Board on International Organizations and Programs.

U.S. National Committee for the International Union
for Pure and Applied Biophysics (USNC/IUPAB)

Summary Description: The Committee was organized in 1962 to serve as a focal point for interaction between the U.S. scientific community and IUPAB. It performs functions typical of USNCs and maintains close contact with a number of scientific societies, particularly the Biophysical Society. Three of its eight members are nominated by the Biophysical Society, and three are nominated by other professional societies; two are members-at-large.

Membership:

Andrew G. Szent-Gyorgyi, Chairman
Michael Beer, Vice Chairman
Alice Burton
Warren L. Butler
Josef Eisinger
Richard Podolsky

Berton C. Pressman
Fred M. Snell

Ex officio
Britton Chance
Frederic M. Richards

Staff:

Samuel B. McKee

Meetings:

October 21, 1977
March 28, 1978

(in conjunction with annual
meeting of the Biophysical
Society)

Accomplishments: The Committee continued to assist in preparations for the VI International Biophysics Congress to be held in Kyoto, Japan. The Second Circular was received and distributed. The Biophysical Society promoted U.S. attendance by printing notices of the Congress in its publications and by arranging reduced-fare flights. The need for flights to accommodate satellite meetings was stressed. The USNC established criteria for award of travel grants and nominated members of a travel grant selection subcommittee.

In preparation for the General Assembly, the Committee discussed anticipated agenda items for the advice of NAS delegates. U.S. scientists were nominated for the IUPAB Council.

At the request of Dr. Arthur Callahan, Office of Naval Research, the Committee discussed the possibility of an international symposium on water and electrolyte balance in the living cell. It was suggested that the idea be pursued as a national meeting initially, and several potential chairmen were suggested.

In response to the Board on International Organizations and Programs, the Committee reviewed the role and structure of IUPAB. The meetings sponsored by IUPAB were thought to be generally successful. A problem of the IUPAB was the inactivity of some Commissions. The USNC decided to attempt to increase the activity of IUPAB Commissions and to improve the liaison between the USNC/IUPAB and interested U.S. societies.

Subcommittee on Travel Grants, USNC/IUPAB

Summary Description: The Subcommittee was established in 1978 to review travel grant applications from U.S. scientists wishing to attend the VI International Biophysics Congress.

Membership:

Lee D. Peachey, Chairman
Gary K. Ackers
Roderick K. Clayton

Donald M. Crothers
Andrew G. Szent-Gyorgyi
Thomas E. Thompson

Staff:

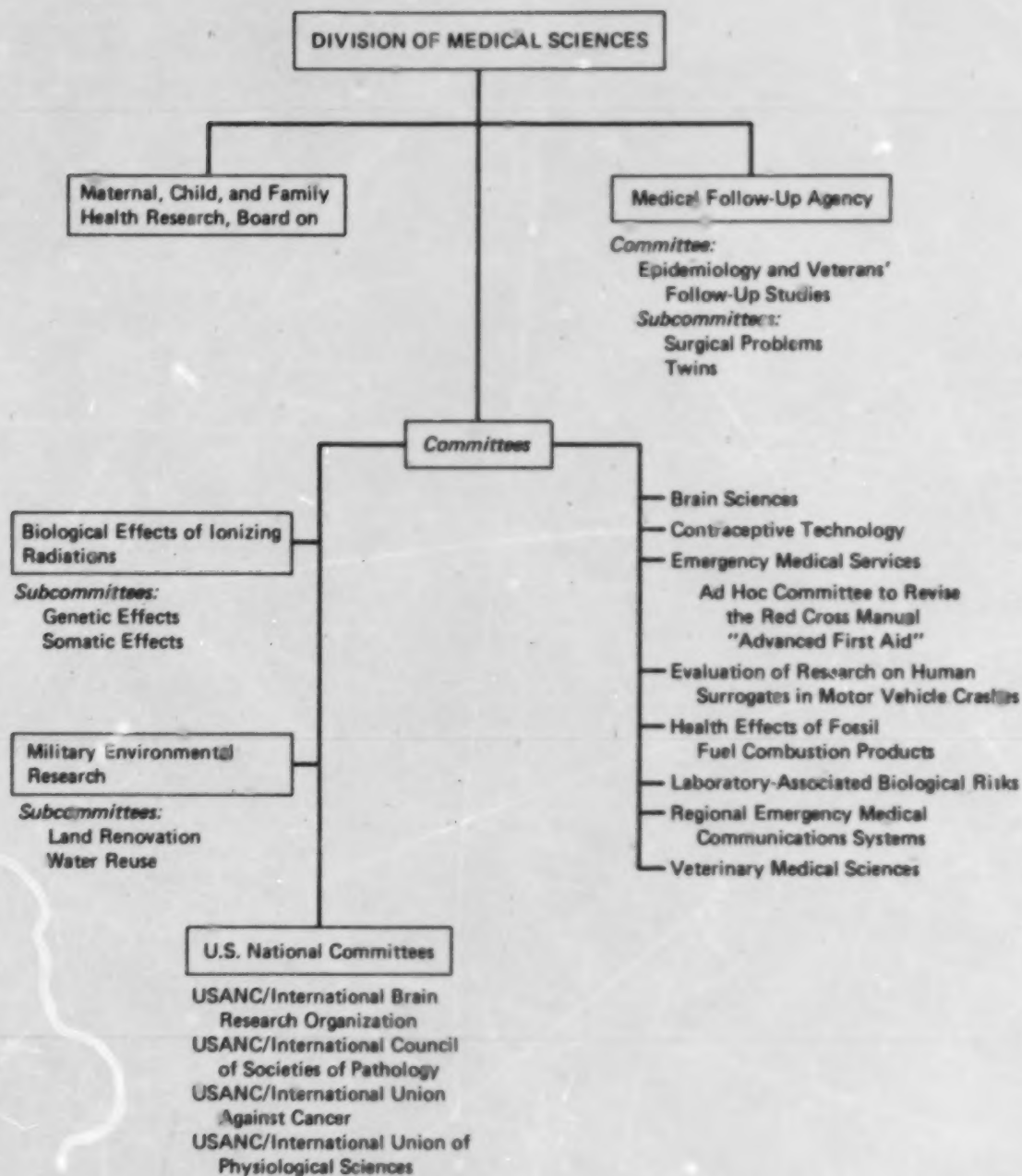
Samuel B. McKee

Meeting:

March 26, 1978

Accomplishments: Two hundred fifty applications were reviewed. Available and anticipated funding will permit the award of about 110 travel grants.

DIVISION OF MEDICAL SCIENCES



DIVISION OF MEDICAL SCIENCES

DEVELOPING ACTIVITIES

The Division of Medical Sciences has been developing a number of new programs during the 1977-1978 fiscal year. Some of these appear in the writeups of the appropriate committees in the body of this report. Several programs, in various stages of early development, have not reached the stage of committee assignment. These are presented briefly below. All programs have been approved by the NRC Governing Board.

- The Department of Energy (DOE) has requested a review of its research in the field of the health effects of ionizing radiation. The study will encompass a scientific evaluation of DOE's research programs and a study of the management of its scientific effort, including the selection of research programs, monitoring of the research effort, and the funding and internal evaluation procedures of the agency. This study will be activated in the fall of 1978.
- A study of the research program in human oncogenesis sponsored by the National Cancer Institute is designed to determine priorities on the types of research that can be expected to yield data leading to scientific bases for preventive intervention. The study will examine selected proposed risk factors and undertake a multivariate analysis of risks to define the relationship among individual risk factors. For proposed risks for which the supporting evidence is weak or is lacking, the committee will indicate fields of research that are most likely to provide supporting data and those for which no data are likely to be forthcoming. The beginning of the program is anticipated in the fall of 1978.
- In 1978, the president of the NAS asked the Division of Medical Sciences to develop a general statement concerning the interests of the NAS in research for improvement of the chronically disabled. A comprehensive view of this issue was prepared and released to various interested agencies, including the Veterans' Administration and the Rehabilitation Services Administration, and to cognizant Congressional committees. Discussions on undertaking parts of this proposal are currently under way.

- A conference has been proposed to examine the current state of immunization practice and prospects for the development of new vaccines against infectious diseases. Particular attention would be paid to vaccines currently under development, vaccines against agents that demonstrate antibiotic resistance, and vaccines against viral, fungal, and parasitic agents, including those associated with human tumors. Support for this program is being sought.
- A study of the basic medical scientific research resources and capabilities of the United States that may be applicable to the study of tropical diseases, the training potential of these programs, and the means of generating interest in their development and expansion has been proposed. Support is being sought for this program.
- A study of the biologic effects of nonionizing radiation (microwaves) is being developed. Extensive discussions have been held with the many federal agencies that have an interest in this issue. Funding for the program is anticipated in the fall of 1978.

In addition to the programs that have been approved by the Governing Board, others are in the discussion and development stage and will be presented to the Assembly for its evaluation and approval in the near future.

BOARD ON MATERNAL, CHILD, AND FAMILY HEALTH RESEARCH

Summary Description: The Board on Maternal, Child, and Family Health Research (BMCFHR) was established in 1974 to perform the following functions:

- Identify the health needs of young persons (infants, children, and adolescents).
- Review research reports and national health statistics in order to help identify maternal, child, and family health needs, and suggest priorities for improving maternal, child, and family health.

- Survey private and public policies and practices that influence maternal, child, and family health care and research, and provide a forum for discussion and study of change.
- Help direct public and private resources toward a coherent national effort on behalf of maternal, child, and family health.

Membership:

Richard E. Behrman, Chairman
 Henry L. Barnett
 Jerome S. Harris
 Edward F. Lis
 Ruth Watson Lubic
 Margaret E. Mahoney
 Luigi Mastroianni, Jr.
 Robert W. Miller

Jacqueline A. Noonan
 Paul G. Quie
 Frederick C. Robbins
 Irving Schulman
 Albert J. Solnit
 Myron E. Wegman
 Doris L. Wethers

Staff:

Enriqueta C. Bond

Meeting:

October 18, 1977

Accomplishments: The Board has established three programmatic goals for early action:

- A study of the needs for the improvement of children's health statistics, emphasizing morbidity data on acute and chronic illnesses in infants.
- A study of the placental role in fetal exposure to damaging agents that are responsible for fetal loss, teratogenesis, and oncogenesis.
- A study of the biologic and medical effects of teen-age pregnancy on both the child and the mother. This program is closely coordinated with parallel studies by the Institute of Medicine and the Assembly of Behavioral and Social Sciences on health policies, education, and behavioral features of the teen-ager at risk of pregnancy. The study will begin with a conference that will examine present knowledge of the consequences of teen-age pregnancy.

COMMITTEE ON THE BIOLOGICAL EFFECTS OF IONIZING RADIATIONS

Summary Description: The Committee on the Biological Effects of Ionizing Radiations (BEIR) is a lineal descendant of the Advisory Committee to the Federal Radiation Council established in 1964.

The Committee's 1972 report on radiation risks (genetic and somatic) provided much of the information on radiation health risks and much of the basis for further calculation of risks in various units (mortality, death rates, life expectancy, disease incidence, morbidity, ill-health, and functional disability).

The Committee's report of 1977 dealt with the analysis of health benefits versus costs, in terms of the needs, problems, and methodologic approaches of the times and the concepts, ethical considerations, and regulations covering radiation of a medical nature and from power sources. The report illustrated the application of methods, but did not attempt a definitive analysis--nor did it reassess the risk from radiation exposure.

In the fall of 1976 and the winter of 1976-1977, the Committee was realigned to meet a new charge: to review bioeffects information that has become available since the 1972 report was published--considering particularly the question of dose rate and radiocarcinogenesis--and to revise such 1972 risk estimates as may be indicated, particularly with respect to genetic and somatic effects.

Membership:

Edward P. Radford, Chairman
Seymour Abrahamson
Gilbert W. Beebe
Michael A. Bender
A. Bertrand Brill
Reynold F. Brown
Stephen F. Cleary
Cyril L. Comar
Carter Denniston
Jacob I. Fabrikant
Marylou Ingram

Charles E. Land
Charles W. Mays
Dade W. Moeller
Dean R. Parker
Harald H. Rossi
Liane B. Russell
William L. Russell
Paul B. Selby
Margaret H. Sloan
Edward W. Webster
Henry N. Wellman

Subcommittee on Genetic Effects:

Dean R. Parker, Chairman
Seymour Abrahamson
Michael A. Bender
Carter Denniston

Liane B. Russell
William L. Russell
Paul B. Selby

Subcommittee on Somatic Effects:

Edward P. Radford, Chairman
Gilbert W. Beebe
A. Bertrand Brill
Reynold F. Brown
Stephen F. Cleary
Cyril L. Comar
Jacob I. Fabrikant
Marylou Ingram

Charles E. Land
Charles W. Mays
Dade W. Moeller
Harald H. Rossi
Liane B. Russell
Margaret H. Sloan
Edward W. Webster
Henry N. Wellman

Staff:

Albert W. Hilberg

Meetings:

July 18, 1977
July 19, 1977
July 19, 1977
September 12-13, 1977
September 17, 1977

November 12-13, 1977

November 21-22, 1977
February 2-3, 1978
February 6-7, 1978
March 17, 1978
March 30-31, 1978
April 13-14, 1978
May 8, 1978
May 9-10, 1978
May 24-25, 1978

(Committee)
(Subcommittee on Genetic Effects)
(Subcommittee on Somatic Effects)
(Subcommittee on Somatic Effects)
(Subcommittee on Genetic Effects,
Oak Ridge, TN)
(Subcommittee on Genetic Effects,
Madison, WI)
(Committee)
(Subcommittee on Genetic Effects)
(Subcommittee on Somatic Effects)
(Writing group)
(Subcommittee on Genetic Effects)
(Subcommittee on Somatic Effects)
(Writing group)
(Subcommittee on Somatic Effects)
(Subcommittee on Genetic Effects)

Accomplishments: The Committee has considered its task and appointed two subcommittees, on genetic effects and somatic effects. These will prepare basic documents for incorporation into a final report of the Committee. It is anticipated that a first draft of the Committee's report will be completed by September 1978. A final report is anticipated by the end of December 1978.

PANEL TO EVALUATE DATA ON MONKEY EXPOSURE TO
EXTREMELY-LOW-FREQUENCY RADIATION

(Committee on Biosphere Effects of Extremely Low Frequency Radiation)

Summary Description: In November 1977, the Assistant Secretary of the Navy asked the Academy to review the data compiled during the continuation of an experiment in which a group of nonhuman primates were exposed to extremely-low-frequency (ELF) nonionizing radiation. The activity was considered a reassessment by a panel of the Committee on the Effects of Extremely-Low-Frequency Radiation that, in completing its report in August 1977, had reviewed the preliminary data from experiments on the primate colony.

Membership:

J. Woodland Hastings, Chairman
Thomas S. Ely

Leon Gordis
Emil Steinberger

Staff:

Alvin G. Lazen

Meeting:

February 9-10, 1978

Accomplishments: The Panel concluded that the data showed no clinically significant adverse effects as a result of long-term exposure of the primates to ELF radiation. However, several sex-specific differences were noted, such as greater weight in exposed male monkeys. The Panel recommended additional research at more moderate exposures to elucidate the causes of the differences.

COMMITTEE ON BRAIN SCIENCES

Summary Description: The Committee was established in 1965 to foster interdisciplinary and international communication among scientists engaged in brain research. Since that time, much of its work has been taken over by the Society for Neuroscience, in whose founding the Committee participated. In 1971, the Committee was asked by the National Institute of Mental Health to evaluate the impact of the application of research results on clinical practice. Four subjects were chosen: chlorpromazine in schizophrenia, the diagnosis and treatment of convulsive disorders, behavior modification, and the recognition of the importance of early experience in child development. Advisory panels were established for each topic and authors were procured to prepare monographs under the panels' guidance.

Membership:

Bernice Grafstein, Chairman
Floyd E. Bloom
Peter B. Dews
Howard F. Hunt
Jerome Kagan
Frederick A. King

Alvin M. Liberman
Richard T. Louttit
Richard L. Masland
Mark Rosenzweig
Berta V. Scharrer
W. Alden Spencer

Staff:

Henry S. Parker

Meetings: None

Accomplishments: During this period, members of the Committee reviewed and commented on the final drafts of History of Behavior Modification and Science and Patterns of Child Care. All four panel reports have now been published.

COMMITTEE ON CONTRACEPTIVE TECHNOLOGY

Summary Description: The Committee was established in August 1977, after NAS President Handler expressed his concern that, although present contraceptive techniques are imperfect and in some cultures are not acceptable, the pharmaceutical industry seems to be content with a limited armamentarium and is no longer pursuing new technology. The Committee was asked to arrange a symposium to provide up-to-date information on the effectiveness of current contraceptive techniques, on the need for new techniques, and on basic and applied research that might lead to progress.

Membership:

Elwood V. Jensen, Chairman
Linda E. Atkinson
Philip A. Corfman
Don W. Fawcett
Roy Hertz

Luigi Mastroianni, Jr.
Jane A. Menken
Warren B. Miller
Sheldon J. Segal

Staff:

Henry S. Parker

Meetings:

August 29, 1977

May 16, 1978

May 16-17, 1978

(Symposium)

Accomplishments: The Committee designed the program and selected speakers for the Symposium on Contraceptive Technology, which was held in the NAS Auditorium on May 16-17, 1978. Twenty invited speakers participated, and the registered attendance was 100. The proceedings will be published.

COMMITTEE ON EMERGENCY MEDICAL SERVICES

Summary Description: The Committee, formed in 1968 as a successor to the NRC Committees on Trauma and Shock, has been supported by categorical and core grants from the Department of Transportation, the Department of Health, Education, and Welfare, the American National Red Cross, and the Robert Wood Johnson Foundation. It has drawn national attention to problems of emergency medical care and has developed guidelines for emergency services. Specific activities and task forces have also provided advice regarding the training of ambulance personnel and emergency medical technicians, ambulance design and standardization, the regionalization of emergency medical services (EMS) systems, emergency airway management, and the broader issue of cardiopulmonary resuscitation and emergency cardiac care.

Membership:

Donald S. Gann, Chairman
Don M. Benson
Ann Bliss
William Drucker
Charles F. Frey
Geoffrey Gibson
William F. Hamilton
Martin D. Keller
Robert Mason

Eugene L. Nagel
Donald G. Penterman
Leslie Rudolf
Blair Sadler
Tamarath Yolles

Liaison Members
David R. Boyd
Lawrence R. Rose

Ad Hoc Committee to Revise the Red Cross Manual "Advanced First Aid":

George T. Anast, Chairman
Richard Aguilar
Claude Atkins
Harry E. Davis
Alan R. Dimick

Archer S. Gordon
Carol S. Kramer
Phillip A. Snodgrass
John G. Suelzer

Staff:

David A. McConnaughey

Meetings:

January 23, 1978
February 13, 1978
March 20, 1978
June 5, 1978

Accomplishments: The Committee has prepared a report and has drawn up an agenda of major issues confronting emergency medical services today, with which it plans to deal through conferences, hearings, or meetings with expert consultants. These include EMS as a medical specialty, physician control of paramedic activity, categorization of emergency departments, EMS system financing, first-responder education in first aid and cardiopulmonary resuscitation, and the role of the emergency-department physician in trauma management. Under the aegis of the Committee, an Ad Hoc Committee to Revise the Red Cross Manual Advanced First Aid has been formed and is expected to complete its task in late 1978.

A report, EMS at Midpassage, has been prepared for anticipated publication in early fall of 1978. This report, in effect an update of the landmark 1968 NAS report, Accidental Death and Disability: The Neglected Disease of Modern Society, reviews the state of EMS. It discusses conceptual problems of system design and management, quality assessment and assurance, and regionalization and categorization, as well as the practical problems associated with EMS system financing, transportation, communication, and training; and it makes recommendations concerning the directions that EMS should take in the future.

COMMITTEE ON EVALUATION OF RESEARCH ON SURROGATES
FOR HUMANS IN MOTOR VEHICLE CRASHES

Summary Description: The Department of Transportation's National Highway Transportation Safety Administration (NHTSA) asked the NAS to undertake a study of the use of cadavers, anthropomorphic dummies, and other modalities in the development of improved motor-vehicle safety design. A thorough review of all techniques used in such design-improvement research included human cadavers, volunteers, live and cadaveric animals, anthropomorphic dummies, mathematical models, engineering approaches, field accident investigations, and experimental and instrumented motor vehicles in daily use. These approaches were placed into a general perspective by evaluating the effects of behavioral modification

by legal strictures on alcohol consumption and driving, early driver education, and speed limits on highways and the effects of redesign of roads and highways.

Membership:

Ayub K. Ommaya, Chairman
Brian D. Blackbourne
Thomas D. Brower
Arthur A. Ezra
Edward H. Harris
Robert Hess

William F. McCormick
John E. McDermott
Gerald W. Nyquist
T. Francis Ogilvie
Randall W. Smith

Staff:

Daniel L. Weiss

Meetings:

May 18, 1978
May 19-20, 1978

(Seminar)
(Workshop)

Accomplishments: A final report issued on June 19, 1978, recommended multiple techniques for research and development that complement each other and pointed out that each approach alone is inadequate. Specifically, the use of human cadavers was seen to be a necessary component of research for motor-vehicle safety. The Committee also prepared a resolution covering the moral and ethical issues of the use of human cadavers in research that was forwarded in letter form by the president of the NAS to the administrator of the NHTSA.

COMMITTEE ON RESEARCH NEEDS ON THE HEALTH EFFECTS OF
FOSSIL FUEL COMBUSTION PRODUCTS

Summary Description: This project had its origin in a Workshop on Health Effects of Fossil Fuel Combustion Products, held in November 1974 under the sponsorship of the Cornell Energy Project and the Electric Power Research Institute (EPRI). As a result of the workshop, the ALS was asked to undertake a more definitive study of the same subject.

Data concerning the health effects of the products of fossil fuel combustion are inadequate for the purposes of energy planning and regulation. This project entails a critical assessment of existing data to identify those which are valid, to determine what critical information is lacking, and to recommend a research program through which needed information may be obtained. The Committee will not

address itself to regulatory decisions concerning exposures, but will be limited to the scientific aspects of the information base on which such decisions may be made. Emphasis will be placed on the combustion products of stationary sources of power. A number of critical reviews have been undertaken quite recently on the effects of pollutants, several under the auspices of the NAS. Wherever practicable, existing reviews will be used for the identification of subjects on which research is needed.

The Committee is composed of experts in biochemistry, biology, biostatistics, clinical medicine, epidemiology, meteorology, toxicology, and air and water pollution engineering. It is supplemented by panels of experts as required.

Membership:

Leonard D. Hamilton, Chairman
Mary O. Amdur
Irwin M. Arias
Robert E. Carroll
Paul K. Glasoe
Bernard D. Goldstein

Ian T. T. Higgins
Paul E. Morrow
Jav A. Nadel
Peter C. Nowell
Harold B. Tukey, Jr.
Geoffrey S. Watson

Staff:

Albert W. Hilberg

Meetings:

October 6-7, 1977
February 24, 1978
March 30-31, 1978

Accomplishments: An interim report of the Committee indicating the direction of considerations to be used for the final report was completed and submitted to the contractors on May 9, 1978. The final report is anticipated by December 1978.

COMMITTEE ON LABORATORY-ASSOCIATED BIOLOGICAL RISKS

Summary Description: The Committee was convened to respond to the issue of research using recombinant DNA technology and other laboratory-associated biological risks. An ad hoc risk-benefit panel examined the issue by studying the information available in the fall of 1977 and issued an assessment document that was the basis of NAS testimony before cognizant committees of Congress. The Committee reviewed the the original assessment document in March 1978 and developed a revised document that included data that had appeared in the interim. It plans to continue the updating of the data and conclusions.

In the late spring of 1978, the Committee reviewed a draft of an outline document prepared by the American Society of Microbiologists (ASM) concerning the education and training of workers in recombinant DNA laboratories and commented extensively on the requirements for such instruction.

Membership:

Maclyn McCarty, Chairman
Paul Berg
Herman N. Eisen
Charlotte Friend
Clifford Grobstein

Rollin D. Hotchkiss
Arthur Kelman
Cyrus Levinthal
Charles H. Rammelkamp

Staff:

Daniel L. Weiss

Meetings:

August 18-19, 1977
October 13-14, 1977 (Risk-Benefit Panel)
October 20, 1977
December 2-3, 1977
March 17, 1978

Accomplishments: The Committee's active projects included (1) the document by the ad hoc risk-benefit panel, which assessed recombinant DNA and other laboratory-associated biological risks; (2) review and revision of the risk-benefit document; and (3) review of the ASM draft report, To Develop Minimum Knowledge for Training of Participants in Recombinant DNA Research.

The Committee is developing a prospective set of problems in the field of biological risk elements in the laboratory for future study.

The expenditures of the Committee for 1977-1978 have been underwritten by the NAS. Efforts to obtain nongovernmental foundation funding are proceeding.

COMMITTEE ON MILITARY ENVIRONMENTAL RESEARCH

Summary Description: The Committee was established to assist the U.S. Army Medical Research and Development Command (USAMRDC) with its program of environmental research. From time to time, the Command is directed to establish safe limits in contamination problems that are peculiar to the military and for which research is necessary to create a data

base--for example, wastes from munition manufacture, land renovation at contaminated Army reservations, and the land disposal of wastewater. The Committee, assisted as required by ad hoc subcommittees, provides USAMRDC with critical reviews of proposed research approaches.

Membership:

Gary A. Van Gelder, Chairman
Franklin D. Aldrich
John Cairns, Jr.
Edward J. Cleary
Robert C. Cooper
Paul T. [unclear]

Bruce B. Hanshaw
William J. Oswald
Harold G. Petering
Leo Weaver
Leonard H. Weinstein

Staff:

John Redmond, Jr.

Meetings:

September 12, 1977
November 10-11, 1977

Accomplishments: On February 1, 1977, a statement was transmitted to the sponsor concerning first-phase toxicity testing of diisopropylmethylphosphonate (DIMP) and dicyclopentadiene (DCPD), which have been found in wells off the reservation of Rocky Mountain Arsenal. A followup statement, commenting on actions taken by the Army since the original statement, was forwarded to the sponsor in September 1977. This statement had two main parts:

- An agreement with the general outlines of the research proposed to investigate the degradation of DIMP and DCPD in natural bodies of water and in the soil.
- A comment on followup mutagenic testing that had been recommended in the February statement. Two independent series of screening tests gave negative results, which resolved the problems that the original equivocal tests had created.

COMMITTEE ON REGIONAL EMERGENCY MEDICAL COMMUNICATIONS SYSTEMS

Summary Description: The Committee was organized in August 1973 to conduct for the Robert Wood Johnson Foundation a national competitive program for the funding of regional emergency medical communications systems. The Committee reviewed 256 applications through a succession of screening processes, which culminated in about 60 site visits by

Committee members, consultants, and staff throughout the United States and Puerto Rico. During the postfunding years, the Committee reviewed the progress of the grantee organizations and reported to the Foundation on the impact of the program.

Membership:

Robert M. Heyssel, Chairman
Charles F. Frey
Donald S. Gann
William F. Hamilton
George I. Lythcott
Roger G. Mark
William E. Matory
Eugene L. Nagel

Donald G. Penterman
George R. Rodericks
Thomas F. Rogers
Graham Watt
C. L. Wilford
Charles B. Womer
Tamarath Yolles

Staff:

David A. McConnaughey

Meeting:

November 3-4, 1977

Accomplishments: The Committee conducted site visits to the grantee projects in 32 states and Puerto Rico, participated in six workshops sponsored by the Foundation for applicants and grantees, and provided grantees and the Foundation with recommendations concerning the directions that the projects should be taking. The Committee's final report was completed and prepared for July 1978 publication. Among the conclusions and recommendations of this report, based on the Committee's experience with the 44 grantee EMS projects, are the following: emergency medical service (EMS) is, and should be recognized as, an essential public service, as are the police and fire services; the configuration and characteristics of an EMS system are best determined locally; rural and wilderness areas should be given priority in programs of federal and state assistance for EMS development; and EMS systems can and do effect significant reductions in accidental death and disability. The Committee has fulfilled its charge and has been discontinued.

COMMITTEE ON VETERINARY MEDICAL SCIENCES

Summary Description: The Committee was organized in 1975 to provide a focal point within the NRC for considerations related to veterinary medical sciences. Its establishment was initiated in recognition of the important role that the veterinary medical sciences play in the biomedical sciences and of their contribution

to human health. It is concerned with the welfare of veterinary medicine, with maximizing the participation of veterinary medical scientists in biomedical research and education, and with making the resources of the veterinary medical community available to the biomedical research endeavor.

Membership:

Leo K. Bustad, Chairman
Walter C. Bowie
Thomas B. Clarkson
W. Jean Dodds
George T. Harrell

Robert R. Marshak
Edward C. Melby, Jr.
Calvin W. Schwabe
William H. Stone

Staff:

Henry S. Parker

Meetings: None

Accomplishments: The Committee had drafted a proposal for a study of the role of the veterinary medical sciences in biomedical research and education. Having met with some difficulty in finding funding support, the Committee drafted a proposal for an assessment of the impact of recent legislation and regulations on the requirement for veterinary medical scientists. That proposal was in the final drafting stage when it was learned that the Committee on a Study of National Needs for Biomedical and Behavioral Research Personnel, of the Commission on Human Resources, was undertaking a study that might substantially overlap that being considered by the ALS. Further action on the ALS proposal was postponed until the scope of the Commission study becomes clear.

MEDICAL FOLLOW-UP AGENCY

COMMITTEE ON EPIDEMIOLOGY AND VETERANS FOLLOW-UP STUDIES

Summary Description: The program of the Medical Follow-up Agency (MFUA), which originated in 1946, facilitates the use of federal records, chiefly the medical records of the armed forces and of the Veterans' Administration (VA), for medical research. The MFUA acts as a records and statistical resource, aiding qualified investigators to obtain the information they require from the records and participating in the analysis of data. It is supported by contracts with the VA, several institutes of the National Institutes of Health, and the Bureau of Radiological Health. From time to time, individual studies are supported by other agencies or by subcontracts with universities. The Committee on Epidemiology and Veterans Follow-up Studies provides policy guidance.

Membership:

Brian MacMahon, Chairman
Ransom J. Arthur
Michael E. De BaKey
Joseph F. Fraumeni, Jr.
Leon Gordis
Leonard T. Kurland

Robert W. McCollum
Paul Meier
James V. Neel
Oglesby Paul
Dorothy P. Rice
Reuel A. Stallones

Subcommittee on Twins:

James V. Neel, Chairman
Bruce K. Eckland
Victor A. McKusick

Sandra W. Scarr
William J. Schull

Staff:

Seymour Jablon
Zdenek Hrubec
Robert J. Keehn

James E. Norman, Jr.
C. Dennis Robinette*
A. Hiram Simon

Accomplishments: Projects active during the reporting period are summarized below.

- Influence of POW Experience on Subsequent Mortality
(supported by the Veterans' Administration)

The mortality and morbidity experience of U.S. servicemen taken prisoner in World War II and the Korean War, previously reported through 1965, has revealed substantially higher risks of morbidity, disability, and mortality among World War II Pacific-area prisoners and Korean War prisoners than among controls or World War II European-area prisoners. For the World War II prisoners, excess mortality lasted about 8 years, but their morbidity experience suggests the possibility of a later increase in mortality from cardiovascular disease. For Korean War prisoners, the duration of excess mortality remains uncertain, as it continued throughout the followup period ending 1965. The present study extends mortality followup through 1975.

Mortality in World War II Pacific prisoners, nearly twice that for the corresponding control group during the first year of followup, declined with time and reached control levels by the tenth year of followup. Mortality in Korean War prisoners was

*On assignment at RERF in Japan during FY 1978.

higher than that for controls for the first 13 years of followup. However, the relative increase over control levels was less than that for the Pacific prisoners, reaching a peak, 1.4, about the twelfth followup year. No increase over control levels of mortality is seen in the majority of World War II prisoners captured in the European theater. However, a small sample of European prisoners who were hospitalized for severe malnutrition on repatriation appear to have experienced higher mortality than did other European prisoners.

Deaths due to trauma, particularly injury resulting from motor-vehicle accidents, contributed to the mortality excess (compared with controls) in World War II Pacific and Korean War prisoners, despite high mortality from trauma in the control groups, compared with U.S. males of the same ages. Among the diseases, tuberculosis was an important contributor to excess mortality in Pacific prisoners. Mortality from cirrhosis of the liver is high in all three former-prisoner groups. Although deaths attributed to excessive alcohol consumption were also increased in former prisoners, the somewhat earlier occurrence of increased cirrhosis mortality in former prisoners suggests that some aspect of the POW experience, possibly deficient diet, may be partly responsible for the increase. No evidence of an increase in mortality due to the major cardiovascular diseases is seen in former POWs.

A report for publication is in preparation.

- Natural History of Multiple Sclerosis (supported by the Veterans' Administration)

Multiple sclerosis (MS) remains an enigma--its cause unknown, its therapy relatively ineffective, and its course unpredictable. The Army World War II series of 762 men diagnosed as having MS in service is being followed through the facilities of the VA and by supplementary examinations by private neurologists in 1961-1963 and 1974-1977. The eighth paper in a series that began in 1966 deals with prognosis over the 10-15 years after diagnosis. Although little of prognostic value can be seen in the signs and symptoms noted at onset or at diagnosis, neurologic status 5 years later has proved to be highly predictive of neurologic status 10 and 15 years after diagnosis. The 1974-1977 clinical followup effort encompasses VA hospital records, examinations by private neurologists, telephone followup by a neurologist, mortality ascertainment, and review of postmortem findings. This work will be completed during FY 1979.

- Early Predictors of Cardiovascular Disease (supported by the Veterans' Administration)

Longitudinal data on blood pressure levels in early adult life and on the risk of stroke, congestive heart failure, and coronary heart

disease are insufficiently detailed and for too short periods of followup to yield criteria for therapy, except in patients with considerably elevated systolic and diastolic blood pressure. The 1944-1945 studies of blood pressure and hypertension in 23,000 Army officers by Hillman, Levy, White, and Stroud provide the basis for a 30-year study of the risk of fatal cardiovascular disease in relation to early observations on blood pressure, height, weight, heart rate, urinary albumin, age, and the like. Information on the fact of death has been difficult to complete, both because of technical problems in the identification of World War II officers in current VA and military files and because the Privacy Act of 1974 had impeded access to the necessary files. These problems have now been solved, and the work of identifying deaths is proceeding.

- VA Cooperative Trials of Cancer Therapy (supported by the Veterans' Administration)

VA surgeons treating such solid tumors as those of the lung, stomach, and large bowel, encouraged by the early promise of adjuvant chemotherapy, have developed a collaborative effort involving 26 hospitals to test competing therapies, usually as adjuvants to definitive surgery. The MFUA, as the statistical coordinating center, is responsible for experimental design and for the storage, processing, and analysis of data.

Twenty-three protocols involving six sites (lung, stomach, colon, pancreas, head and neck, and esophagus) have been initiated, and a total of 10,780 patients were entered into the trials by January 1, 1978. In general, the trials thus far have demonstrated the ineffectiveness of a variety of treatments that had been considered promising on the basis of studies in animals. Two treatments have been found that improved survival after resection: preoperative x-ray treatment for cancers of the lower sigmoid and rectum, and 5-fluorouracil administration after resection of cancers of the large bowel.

The large experience of well-documented cases is being used for a variety of purposes in addition to the evaluation of experimental therapies. Among these are the description of the disease process and the identification of characteristics of the patient and his disease that are related to long-term prognosis. An examination of curves of survival after resection of the stomach for cure suggests that there may be three cohorts of survivors: about 51% of the patients with a median survival of 8 months, 23% of the patients with a median survival of 25 months, and 26% with a median survival of 13.5 years. This last number is equal to expectation at published age-specific death rates for U.S. males. Similar analyses of lung-cancer and colon-cancer patients suggest two-cohort mixtures; neither site gives rise to a "cured" cohort.

Although it is not yet possible to identify the cohort to which an individual patient belongs, prognostic factors associated with more (or less) favorable survival can be used to distinguish subgroups in which the proportions of patients belonging to the several cohorts are quite different. A report of this work has been prepared for publication.

A study of the occurrence of second primary disease after resection for adenocarcinoma of the colon or rectum has been initiated with patients entered into the early trials. This study is being undertaken in collaboration with the National Cancer Institute, whose chief interest is whether new primary disease is caused by particular drugs used in the treatment of cancer--in this case thio-TEPA (triethylenethiophosphoramide) and FUDR (floxuridine).

- Mortality from Cardiovascular Diseases in Relation to Traumatic Amputations (supported by the Veterans' Administration)

At the urging of veterans groups, Congress, through Public Law 94-433, directed the VA to evaluate "statistically valid samples of disability claims of veterans having service-connected extremity amputation matched by age, sex, and war period with non-amputee veterans." The Department of Medicine and Surgery of the VA asked the MFUA to carry out this research. In the spring of 1977, the Committee on Epidemiology and Veterans Follow-up Studies and the Assembly of Life Sciences approved the protocol for the study, and a formal proposal was submitted to the VA.

The final details of the study design evolved after discussions with the staff of the VA and of the House and Senate Committees on Veterans Affairs. The research objective is to compare mortality from cardiovascular diseases and from other specific causes among groups of subjects with trauma-related amputations that were proximal (at or above elbow, at or above knee) or distal (part of hand, part of foot) and subjects who incurred injuries that resulted in disfigurement.

Subjects in all three groups are restricted to World War II Army inductees injured in the line of duty, hospitalized during 1944 or 1945, and discharged from military service for these disabilities. A subject was included if the injury consisted only of trauma to the extremity, and the disfigurement group was restricted to wounds or fractures without artery or nerve involvement. Among subjects meeting the above criteria, the proximal amputees were matched, one to one, with the disfigurement group on age at hospital admission and length of service until that admission. The final sample consists of 3,890 proximal amputees, an equal number of matched controls in the disfigurement group, and 2,918 distal amputees.

Analysis of data is now under way. The final report to the VA is due on December 31, 1978. A paper written by the project officer and an independent medical collaborator will then be submitted for publication in the open scientific literature.

- Mortality after Splenectomy as a Result of Trauma (supported by the National Cancer Institute)

This is one of a series of studies investigating possible relationships between immunologic abnormalities and subsequent cancer mortality. It was possible to identify 740 men who had splenectomy after trauma while in the Army in 1944-1945. Mortality among them, from 1946 to 1974, was compared with that among age-matched controls (men with diagnoses of nasopharyngitis). The results were as follows: the splenectomized men had no unusual mortality from cancer, either in toto or for any particular site; and the splenectomized men did have abnormally high death rates from ischemic heart disease, from pneumonia, and from cirrhosis of the liver. A report has been published.

- Mortality in Men with Bronchial Asthma (supported by the National Cancer Institute)

This study sought possible unusual cancer patterns in men with an abnormal allergic state. The study group consisted of 9,550 men diagnosed in Army hospitals during World War II. The controls were men diagnosed as having nasopharyngitis. Excess lung cancer was found among the asthmatic men, contrary to reports that the allergic state may lower the risk of cancer. Excess mortality was also found for heart disease, a number of respiratory system diseases (especially asthma and emphysema), and cirrhosis of the liver. A publication is in press.

- Chronic Alcoholism and Subsequent Mortality (supported by the National Cancer Institute)

Although alcoholics are known to have excessive mortality related to a number of causes, most studies have been of older persons and subjects selected from admissions to psychiatric facilities or to alcoholic treatment programs. In this study, 4,401 men admitted to Army hospitals for chronic alcoholism in 1944-1945 were studied for mortality experience over the period 1946-1974, in comparison with an equal number of age-matched controls (men diagnosed as having nasopharyngitis).

The alcoholic men had nearly twice the mortality rate of the controls. Mortality rates from alcoholism, tuberculosis, cirrhosis, and trauma were especially high, but significantly increased mortality of lesser degree was found for several other causes, including ischemic heart disease.

A paper has been submitted to the American Journal of Epidemiology.

- Sarcoidosis and Subsequent Mortality (supported by the National Cancer Institute)

Because sarcoidosis is a disease in which anergy is a prominent feature, a study of Army and Navy veterans of World War II or Korea diagnosed as having this disease was undertaken to determine whether the anergy was associated with excessive cancer risk. It was possible to assemble a roster of 208 men, who were traced for mortality through 1975. The men with sarcoidosis had large excesses of deaths attributed to sarcoidosis itself and to tuberculosis, but no excess in cancer mortality. A publication is being prepared.

- Exposure to Tetrachloroethane and Cancer (supported by the National Cancer Institute)

During a part of World War II, tetrachloroethane was used by the Army as a solvent for chemicals used in the impregnation of clothing for protection against mustard gas. During the war, a different agent was developed that was soluble in water. It has been possible to develop lists of "impregnating companies" that used one or the other of these chemicals. Because tetrachloroethane is a substance with known acute toxicity (acting especially to depress marrow function), the groups identified are being followed to determine what long-term effects on mortality may be associated.

- Medical Genetic Studies of Twins (supported by the National Heart, Lung, and Blood Institute)

Twins make possible some of the most incisive approaches available for the study of complex human events by providing control of covariables in pairs of individuals of the same age and family background and, in the case of monozygotic twins, almost always of the same genotype. The twin program of the MFUA is based on a registry of 15,900 pairs of twin veterans who participate in a variety of medical-genetic studies in person and through the extensive records resources of the military agencies and of the VA. The program is concerned with the exploitation of this resource, with their maintenance, with the preservation of their applicability to a wide variety of research objectives, and with the activities necessary to evaluate feasibility and to develop methods for new investigations. A Subcommittee on Twins monitors the activities of the program, including the selection of specific research efforts on the basis of appropriate research protocols.

Studies that have been completed concern the role of smoking in relation to respiratory and cardiovascular symptoms, residence-associated exposure to air pollution in relation to respiratory symptoms, change in ocular pressure after application of corticosteroids, genetics of atopic dermatitis and psoriasis, genetics of multiple sclerosis, genetics of immunoglobulin E, and evaluation of early mortality.

Work was recently completed on the assessment of genetic and environmental components in risk factors for ischemic heart disease, the evaluation of twin concordance for cancer and ischemic heart disease morbidity and mortality, and identification of the genetic influences on income and on other economic and social characteristics. The feasibility of evaluating genetic influence on items on the Thurstone Temperament Schedule has been determined. Studies are being developed on evaluating genetic aspects of tests that distinguish schizophrenic subjects from their nonschizophrenic twins, on evaluating genetic aspects of immunologic parameters in relation to aging, on genetic aspects of peptic ulcer, and on within-pair differences between twins with the diagnosis of alcoholism in the organ-specific complications of this disorder. With additional funds from the National Science Foundation, the feasibility of obtaining data on occupation, education, and other socioeconomic factors from the adult offspring of the twin panel members is being determined. Information generated by the ongoing studies is routinely incorporated into the operating files of the Registry. The files have been updated with information on mortality through 1977. An updating with information on hospitalizations in the VA system in 1977 is being sought.

- Late Mortality and Morbidity Effects of Occupational Exposure to Microwave Radiation (RADAR) (supported by the Bureau of Radiological Health)

Man is increasingly exposed to microwave energy in his daily life. The health implications of exposure to such radiation are not understood, and protective standards have no firm biologic basis. This study had the purpose of assessing the effects of microwave radiation on human health by relating occupational exposures to mortality throughout the veteran period and to hospitalizations in service and VA hospitals.

Two occupational cohorts, one maximally exposed and the other minimally exposed, have been compared. Each cohort consists of approximately 20,000 men who were graduated from a Navy technical school during the Korean War. No differences have been identified between the cohorts in either mortality or morbidity attributable to exposure to microwaves. A draft report has been prepared, and publication is expected during FY 1979.

- Cancer Mortality among Army World War II X-ray Technicians (supported by the Bureau of Radiological Health)

Ionizing radiation is known to be a potent carcinogen, but whether persons occupationally exposed to low-dose, chronic radiation are thereby at measurable risk remains a controversial question. At the request of the Bureau of Radiological Health, 6,500 men trained as x-ray technicians in the Army were compared with a control group of comparable size as to mortality, especially from

cancer, over a period of 29 years after service. No significant mortality differences were found between the former x-ray technicians and the controls. The study has been completed and published.

- Epidemiology, Course, and Prognosis of Amyotrophic Lateral Sclerosis (supported by the National Institute of Neurological and Communicative Disorders and Stroke)

Amyotrophic lateral sclerosis (ALS) is a progressive motor disease of unknown etiology and rapidly fatal course. With only 1,000-1,500 deaths annually in the United States, large series are difficult to accumulate and epidemiologic studies quite rare. Speculations as to etiology range from a purely genetic basis to an unknown exogenous agent. This study of ALS in veterans is aimed at the identification of risk factors and of prognostic characteristics of onset and at the development of a survival curve. Two epidemiologic methods are being used, one a case-control interview of veterans in VA hospitals with ALS versus those with brain tumors, the other a case-control study of the military records of persons dying of ALS in the interval 1963-1967 versus controls matched on age, branch of service, and date of entry into military service. One report concerned with risk factors for the disease has been drafted. Analysis directed at the other study objectives continues.

An unexpected finding is that ALS patients have an unusually high incidence of traumatic injuries many years before onset. The meaning of this intriguing finding remains obscure.

- Vietnam Registry of Head and Spinal Cord Injuries (supported by the National Institute of Neurological and Communicative Disorders and Stroke)

The National Institute of Neurological and Communicative Disorders and Stroke (NINCDS) has undertaken a clinical followup study of men who suffered head and spinal cord injuries during the war in Vietnam and for whom information concerning the wounds and their initial treatment was entered into the Registry of Head and Spinal Cord Injuries that was created in Vietnam at the initiative of NINCDS.

The NINCDS solicited the assistance of the MFUA in assembling the clinical records concerning treatment in military or VA hospitals after the initial admission; with the approval of the VA and the military services, this task was undertaken. The work was completed during the year.

Planning Efforts: The studies in the MFUA program often require major investments of effort and funds, not only by the MFUA itself, but also by the federal agencies whose records are used (chiefly the military services and the VA). It is therefore usually necessary to invest heavily in planning, trials of alternative methods, and trials of feasibility before preparing a definitive protocol for a proposed study.

Support for such planning efforts is received through a contract with the National Institutes of Health; a portion of the funds received from the VA is also used for these purposes in relation to studies of special interest to the VA. During FY 1978, a number of planning activities were undertaken:

- Testicular Cancer

A three-part study of testicular cancer is in preparation, to be based on an Armed Forces Institute of Pathology (AFIP) series of some 6,000 cases. There will be a prospective study of certain genital abnormalities in an effort to discover any links with cancer of the testicle. A differential survival analysis of the AFIP case series will be undertaken to compare the several systems of pathology classification in use, and a case-control epidemiologic study of veterans of World War II, Korea, and Vietnam will search for factors that confer increased risk for this cancer.

- Multiple Sclerosis

Recent evidence suggests that multiple sclerosis victims are more likely to have lived with indoor dogs than their matched controls. A series of some 1,000 patients discharged from VA hospitals with a diagnosis of MS during 1971-1977 and two sets of matched controls from the same source will be queried, by means of a mail questionnaire, about residential and medical history and household pets to learn whether this finding can be confirmed. The hypothetical association is made more plausible by the fact that MS patients are known to have unusually high concentrations of antibody to measles virus, and the virus of canine distemper is closely related to measles virus, both being paramixoviruses, difficult to distinguish antigenically.

- Participants in Nuclear Tests

Much publicity has been given in recent months to the possibility that there is an association between presence at tests of nuclear weapons (especially a particular test in 1957, code-named SMOKY) and subsequent leukemia. The MFUA has been asked to undertake studies of whether test participants have, in fact, been at measurably increased risk of leukemia or other cancers. The Departments of Defense and of Energy are directly concerned and have agreed to provide funds for a study, and the VA has offered to make its records systems available.

- Long-term Mortality among Alcoholics

A just-completed study mentioned above has emphasized the need for more detailed study of the relationship between alcoholism and excess mortality from cancer and diseases of the digestive system other than cirrhosis. The VA has strong interest in the

problems of alcoholism, and a study is being planned with the encouragement of the VA.

● Clustering of Hodgkin's Disease

In recent years, there have been reports of "clusters" of cases of Hodgkin's disease, typically in high-school classmates and their contacts, both direct and indirect. It has been difficult to interpret the significance of the reported findings, because the definitions of "association" have not always been clear. In collaboration with the Environmental Epidemiology Branch of the National Cancer Institute, the MFUA has been exploring effective ways to approach the problem with well-defined and objective definitions of clustering.

● Preparation of Diagnostic Index to Navy Hospital Admissions in World War II

Since the 1973 fire at the National Personnel Records Center, in which perhaps 80% of Army records for World War I, World War II, and the Korean War were destroyed, the staff of the MFUA has sought ways of making greater use of Navy records, which escaped with little damage. The Navy "Fa-card" file in St. Louis (about 15 million) could, if punched and put on magnetic tape, provide a diagnostic index to the Navy World War II medical experience comparable with that which has been so useful in the study of Army records. Procedures for creating an index have been devised, and a proposal was approved by the Committee on Epidemiology and Veterans Follow-up Studies at its meeting in May 1976. This proposal has now been approved by the Surgeon General of the Navy.

The Fa-card file had been scheduled by the Archives and Records Service for destruction in September 1978, but intercession by the MFUA has resulted in a deferment of the disposal until December 31, 1979. This will, it is hoped, allow sufficient time to obtain funding of the project.

USA NATIONAL COMMITTEES

USA National Committee for the International Brain
Research Organization (USANC/IBRO)

Summary Description: The International Brain Research Organization (IBRO) was founded in 1960 as an international body to bring together neuroscientists of different disciplines from many countries and to provide a means for them to cooperate in furthering the aims of brain research. Membership is composed of both individual and national

members, the latter required to adhere in one of five dues categories. In May 1972, the Academy, at the invitation of the Secretary General of IBRO, became the adhering body for the United States and established the USA National Committee to effect appropriate U.S. participation in IBRO and to advise the Academy on international matters relevant to neuroscience. This is a continuing activity of indefinite duration.

Membership:

Theodore H. Bullock, Chairman
W. Maxwell Cowan
Robert W. Doty
Neal E. Miller
Walle J. H. Nauta

Dominick P. Purpura
Eugene Roberts
Berta V. Scharrer
Richard F. Thompson

Staff:

Phyllis A. Gardner

Meeting:

April 4, 1978

Accomplishments: In its meeting on April 4, the Committee made specific suggestions to be transmitted to the IBRO Executive Committee regarding the First International Congress on the Brain, which will be held in Lausanne, Switzerland, in April 1982. It also repeated its recommendations that IBRO workshops and fellowships be stepped up and that the United States specifically offer opportunities for fellowships. It also recommended that individual membership in IBRO be expanded, with emphasis on younger scientists.

USA National Committee for the International
Council of Societies of Pathology (USANC/ICSP)

Summary Description: In 1957, the World Health Organization (WHO) undertook a program to promote worldwide standardization of tumor classification in the furtherance of medical treatment and research in the field and established 27 International Reference Centers (IRCs) to handle the operational aspects of the tumor types selected for study. In 1962, at the request of the WHO, the International Council of Societies of Pathology was formally established as an international organization to advise the Cancer Unit of WHO concerning the program. Since that time, the Academy has maintained the USA National Committee to coordinate the policies and activities of the four participating societies of pathology in the United States: the American Society of Clinical Pathologists (ASCP), the American Association of Pathologists (AAP), the College of American Pathologists (CAP), and the U.S.-Canadian Division of the International Academy of Pathologists (IAP). To

date, 20 IRCs have completed their work, published manuals, and prepared transparencies for distribution.

In November 1971, the director of the National Cancer Institute invited the Committee to advise him on the scientific quality of the work done by the IRCs and to recommend an appropriate level of support to accelerate their work.

Membership:

Bruce H. Smith, Chairman
Leland D. Stoddard, Vice Chairman
H. Russell Fisher
William H. Hartmann

Robert E. Stowell

Ex officio
F. K. Mostofi

Staff:

Phyllis A. Gardner

Meeting:

November 21, 1977

Accomplishments: The Committee accomplishes its promotional and educational goal by sending an exhibit, constructed and maintained by the Armed Forces Institute of Pathology, to national and regional meetings of pathology societies and by arranging for lectures during the meetings by pathologists who are experts on the particular tumors being discussed and who have usually been associated with the development of its classification. During FY 1978, the exhibit has been shown as follows:

November 1977	Sections of all completed classifications	ASCP-CAP, Las Vegas
March 1978	Sections of all completed classifications	IAP, Atlanta

Lectures were as follows:

November 1977	Testis - F. K. Mostofi	ASCP-CAP, Las Vegas
March 1978	Testis - F. K. Mostofi	IAP, Atlanta
	Female genital tract - W. M. Christopherson	IAP, Atlanta

Revisions have begun on the classification of lung, breast, and soft-tissue tumors.

The Committee prepared a questionnaire that was sent to 453 directors of approved residency training programs in surgical pathology in the United States in an attempt to learn the extent to which the IRC materials are known and used in the United States. The following information was derived from the responses: 63% had knowledge of the classifications; 39% had attended at least one of the lectures on the IRC programs at a meeting of a national pathology society; 56% had the manuals or "blue books" in their libraries; 25% used them frequently; 26% used them occasionally; and 27% used the classifications routinely in reporting tumors.

The Committee had canvassed U.S. members of the International Classification of Tumors program, requesting their cooperation in writing short articles that can be submitted to quality medical journals in the United States as letters to the editor or as editorials. This program is proceeding.

USA National Committee for the International
Union Against Cancer (USANC/UICC)

Summary Description: The International Union Against Cancer (UICC) was founded in 1933 at the I International Cancer Congress in Madrid. In 1952, the USA National Committee was established by the Academy to coordinate the activities of scientists in the United States with those of other members of the UICC, which is now composed of 180 members in 75 countries. Committee membership is made up of two representatives each from the American Cancer Society and the National Cancer Institute, one representative each from the other full members of the UICC in the United States, and officers of the UICC residing in the United States. This is a continuing activity of indefinite duration.

Duties of the Committee are to seek support for U.S. participation in the UICC, to nominate and brief representatives to meetings of the UICC, to provide for the administration of the payment of the national subscription to the UICC on behalf of the United States, to establish an office or facilities for the transmission of information related to cancer, to encourage membership in the UICC by U.S. organizations, and to recommend to the UICC Nominating Committee candidates for all offices.

Membership:

C. Chester Stock, Chairman
Baruch S. Blumberg
David B. Clayson
Charles R. Ebersol
Joseph F. Fraumeni, Jr.
Oscar N. Guerra
Thomas C. Hall
Robert C. Hickey
William V. McDermott

Edwin A. Mirand
Gregory T. O'Connor
William W. Singleton
George Weber

Ex officio
Gerald P. Murphy
W. Armin Willig

Staff:

Phyllis A. Gardner

Meetings:

March 13-14, 1978
March 15, 1978

(Selection Subcommittee)

Accomplishments: The Committee conducted a travel grant program to benefit U.S. scientists who could not otherwise attend the XII International Cancer Congress, to be held in Buenos Aires, Argentina, October 5-11, 1978. From 443 applications received, the Committee's Selection Subcommittee reviewed and approved 417 for travel grants. This number includes the 19 delegates to the UICC General Assembly, which is held in conjunction with the Cancer Congress. Contributions toward the travel program were received from the American Cancer Society, the Damon Runyon-Walter Winchell Cancer Fund, the Edward Mallinckrodt, Jr., Foundation, and the National Cancer Institute. Members of the Committee were active on the scientific program committee of the Congress Organizing Committee. The Committee has discussed the possibility of inviting the UICC to hold the XIII International Cancer Congress in the United States in 1982.

USA National Committee for the International
Union of Physiological Sciences (USANC/IUPS)

Summary Description: Although International Physiological Congresses have been held triennially since 1889, the International Union of Physiological Sciences was incorporated in 1953, and the USA National Committee was formally established by the Academy in 1955. The Committee's major effort is the implementation of a travel grant program to assist qualified American scientists in attending the international congresses. It is also responsible for briefing U.S. delegates to IUPS General Assemblies, which coincide with congresses; it encourages cooperative enterprises to advance physiological knowledge; and it advises the Academy on all matters concerning U.S. participation in the IUPS. It is a continuing activity of indefinite duration.

Membership:

William F. Ganong, Chairman
Knut Schmidt-Nielsen, Vice Chairman
Arnost Kleinzeller, Secretary
Charles F. Code
John S. Cook
Robert E. Forster, II

Francis J. Haddy
Daniel C. Tosteson

Ex officio

John M. Brookhart
John R. Pappenheimer

Staff:

Phyllis A. Gardner

Meeting:

April 12, 1978

(Atlantic City, NJ)

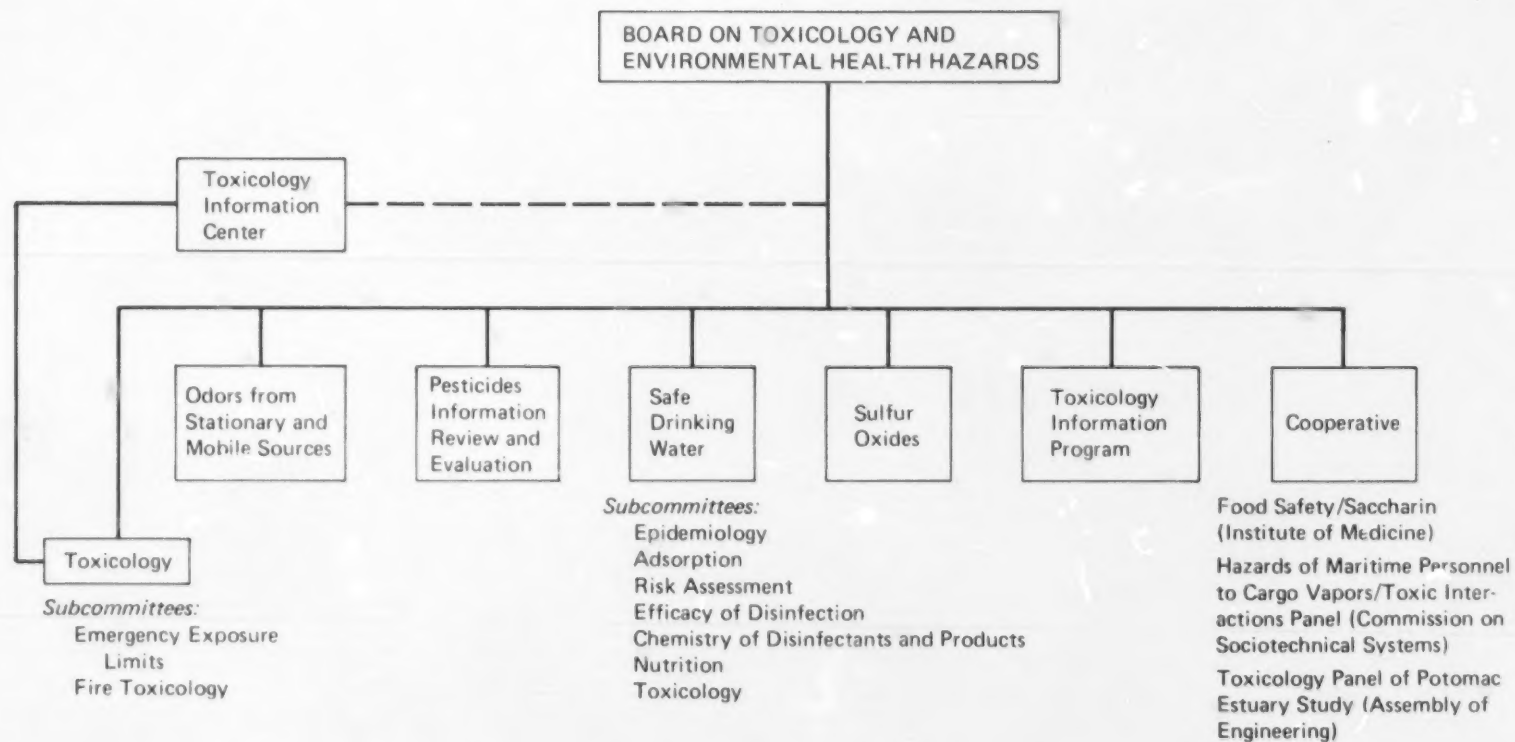
Accomplishments:

The Committee compiled its report on the XXVII IUPS Congress, which was held in Paris, France, in July 1977, and on the travel grant program it conducted to benefit U.S. citizens. The report was distributed to the agencies that supported the program: the Air Force Office of Scientific Research, the National Aeronautics and Space Administration, the National Science Foundation, the National Institutes of Health, private industry, and foundations.

Because of the creation over the last 10 years of a number of new, specialized societies of interest to physiologists, the Committee revised its Constitution to include representation from the Biomedical Engineering Society and the Society for Neuroscience.

The Committee was responsible for the introduction to the IUPS General Assembly in July 1977 of a very strong statement on the free circulation of scientists to meetings sponsored by IUPS; the statement was adopted. This is of interest to the NRC Commission on International Relations and the International Council of Scientific Unions (ICSU).

BOARD ON TOXICOLOGY AND ENVIRONMENTAL
HEALTH HAZARDS



BOARD ON TOXICOLOGY AND ENVIRONMENTAL HEALTH HAZARDS

Summary Description: In October 1974, a visiting committee was appointed by the Assembly to review the activities of committees that were concerned with toxicology and related matters. Chief among the recommendations contained in the September 1975 report of the visiting committee was that the Assembly expand its activities in toxicology by establishing a division of toxicology and health hazards within which appropriate activities would be supervised and coordinated. The Assembly discussed this proposal at its meetings in November 1975 and January 1976 and voted in March 1976 to establish, under the Executive Office of the Assembly, a board on toxicology and environmental pollutants. After discussion of the proposal with other elements of the NRC, the Assembly, in November 1976, approved the establishment of the Board on Toxicology and Environmental Health Hazards. This proposal was approved by the NRC Governing Board on January 22, 1977. The first members of the Board were appointed in May 1977. Support for the new organization was not forthcoming until the signing of a contract with the Environmental Protection Agency, in September 1977, to undertake studies of sulfur oxides and other pollutants.

The Board provides guidance and leadership to the Assembly on matters of toxicology and environmental health hazards, and contributes to its ability to address broad issues of occupational and environmental toxicology. It serves as the Assembly focus for deliberation on issues in these fields and aids other elements of the NRC in carrying out related studies.

Membership:

Norton Nelson, Chairman
Earl P. Benditt
John J. Burns, Jr.
John W. Drake
Ronald W. Estabrook
Ronald W. Hart
Julius E. Johnson

Victor G. Laties
Brian MacMahon
David E. Reichle
Reuel A. Stallones
Bert L. Vallee
Gerald N. Wogan

Staff:

Robert G. Tardiff

Meetings:

December 22, 1977
March 29, 1978
May 31, 1978

Accomplishments: The Board itself has been engaged in the development of a program for the investigation of the many factors that enter into the setting of priorities for the study of toxic substances, this should lead to the design of a comprehensive quantitative system for the establishment of priorities. It is also restructuring the Assembly's longstanding Committee on Toxicology. The activities of the elements of the Board are described below.

COMMITTEE ON MEDICAL AND BIOLOGIC EFFECTS
OF ENVIRONMENTAL POLLUTANTS

Summary Description: The Committee was established in 1970 (originally as the Committee on Biologic Effects of Atmospheric Pollutants) to prepare a series of comprehensive reports evaluating the current state of knowledge on the medical and biologic effects of various environmental pollutants on plants, animals, and humans. The Environmental Protection Agency supported this effort through an annually reviewed contract that specified the pollutants that EPA and the Assembly had agreed to examine. A subcommittee was established for the duration of the study of each pollutant. The committee reviewed the work of the subcommittees periodically.

The role of the committee in coordinating and supervising the work of its constituent study groups has now been assumed by the newly established Board on Toxicology and Environmental Health Hazards.

Membership:

Reuel A. Stallones, Chairman
Martin Alexander
Andrew E. Benson
Clement A. Finch
Eville Gorham

Robert I. Henkin
Ian T. T. Higgins
Henry Kamin
Roger P. Smith

Subcommittee on Airborne Particles:

Ian T. T. Higgins, Chairman
Roy E. Albert
Robert J. Charlson
Ellis F. Darley

Benjamin G. Ferris, Jr.
Robert Frank
Kenneth T. Whitby

Subcommittee on Ammonia:

Henry Kamin, Chairman
James C. Barber
Stuart I. Brown
C. C. Delwiche
Daniel Grosjean
Jeremy M. Hales

L. W. Knapp, Jr.
Edgar R. Lemon
Christopher S. Martens
Albert H. Niden
R. A. Rasmussen
Robert P. Wilson

Subcommittee on Hydrogen Sulfide:

Robert P. Smith, Chairman
Robert C. Cooper
Trygg Engen
E. R. Hendrickson

Morris Katz
Thomas H. Milby
J. Brian Mudd
August T. Rossano

Subcommittee on Iron:

Clement A. Finch, Chairman
Elmer B. Brown
John C. Brown
Howard E. Bumsted
Merle Bundy
John D. Hem

J. B. Neilands
Darrell R. Van Campen
Raymond C. Wanta
Munsey S. Wheby
Donald O. Whittemore

Subcommittee on Zinc:

Robert I. Henkin, Chairman
Jean Apgar
Jerome F. Cole
Joseph E. Coleman
Carl H. Cotterill
Michael Fleischer
Robert A. Goyer

Bernard Greifer
Bernard D. Knezek
Paul Mushak
Magnus Piscator
Bruce R. Stillings
John K. Taylor
Douglas A. Wolfe

Staff:

T. D. Boaz, Jr.
James A. Frazier

John Redmond, Jr.

Meetings: None

Accomplishments: The committee has completed all assigned tasks and, with its subcommittees, has been disestablished. Four reports were published during the fiscal year: Arsenic, Carbon Monoxide, Nitrogen Oxides, and Platinum-Group Metals. Five others were submitted to the sponsor and will be published soon: Airborne Particles, Ammonia, Hydrogen Sulfide, Iron, and Zinc.

COMMITTEE ON ODORS FROM STATIONARY AND MOBILE SOURCES

Summary Description: As part of the Clean Air Act Amendments of 1977, Congress specified that the Environmental Protection Agency study odors. The EPA in turn asked the National Academy of Sciences to study the

effects of odors and odorous emission on public health and welfare, the sources of such emission, the technology or other measures available for its control, and the costs and benefits of alternative measures or strategies for its abatement. A part of the task will be to determine the feasibility and practicability of measuring odors objectively for the purpose of regulatory enforcement. The study will undertake to evaluate such questions as the relationship of thresholds for odor detection to intensities that pose adverse health effects, biologic adaptability to odors, and synergistic effects of combinations of odorous compounds.

Membership:

Amos Turk, Chairman
Lloyd M. Beidler
David M. Benforado
William Cain
Thomas D. Crocker
Andrew Dravnieks
Richard A. Duffee

Melvin W. First
R. David Flesh
J. Ronald Miner
David G. Moulton
Edward I. Selig
Janet T. Wittes

Staff:

James A. Frazier

Meetings:

February 13, 1978
April 18, 1978

Accomplishments: A first draft has been prepared and is being reviewed. Congress stipulated in the 1977 Amendments that this report be submitted by January 1, 1979. The report is scheduled to be delivered to EPA by December 15, 1978.

COMMITTEE ON PESTICIDES INFORMATION REVIEW AND EVALUATION

Summary Description: Public Law 92-516, the Federal Environmental Pesticide Control Act, provides for the NAS to establish a committee for prompt review and resolution of controversies over scientific and technical facts that arise in the course of hearings before a federal law judge on matters involving pesticide registration and regulation. To meet this responsibility, the Committee on Pesticides Information Review and Evaluation was established in 1977. The basic function of the committee is to organize and direct the activities of such expert subcommittees as may be established to respond to specific queries. It will also consider broad scientific issues related to the pesticides regulatory process.

Membership:

Kurt J. Isselbacher, Chairman
David B. Clayson
Stanley Goldfarb
James E. Grizzle
Jerard Hurwitz

Alexander Leaf
Dante G. Scarpelli
Edward A. Smuckler
Frank G. Standaert
Myron E. Wegman

Staff:

Robert J. Golden

Meetings:

June 20-21, 1977	(Woods Hole, MA)
July 25-26, 1977	
August 21-23, 1977	(Woods Hole, MA)

Accomplishments: The first referral to the committee came on June 15, 1977. It involved the carcinogenic properties of heptachlor and chlordane and their metabolic oxidation products; interpretation of pathologic lesions induced in laboratory animals; and the assessment of potential human risk of cancer posed by continued use of these pesticides. The committee submitted its report to the Chief Administrative Law Judge, Environmental Protection Agency.

COMMITTEE ON SAFE DRINKING WATER

Summary Description: The Safe Drinking Water Act (Public Law 93-523) became effective on December 16, 1974. It required the NAS to undertake a comprehensive study of the health effects of the various contaminants found in drinking water. The Assembly thereupon formed the Committee on Safe Drinking Water, and its report, Drinking Water and Health, was published by the Academy in 1977. The Act was amended in 1977 to require that the EPA and Congress receive new information from the NAS every 2 years after the issuance of the original report. As a result of the amendment, the committee has been reorganized and seven new subcommittees have been established. Three subcommittees are studying the efficacy of alternative methods of disinfection and the potential chemical byproducts formed, as well as evaluating the theoretical and practical use of granular activated carbon for water treatment. Acute toxicity related to accidental chemical spills and methods of disinfection are being evaluated by the Subcommittee on Toxicology. The epidemiologic associations between some constituents of water and chronic diseases are being investigated by the Subcommittee on Epidemiology. Another subcommittee is reviewing the experimental evidence on chronic toxicity of organic and inorganic water contaminants with the aim of developing a unified approach to risk estimation. The Subcommittee on Nutrition is evaluating the contribution to total body burden of essential mineral nutrients found in drinking water.

Membership:

John Doull, Chairman
Joseph F. Borzelleca
Richard S. Engelbrecht
David G. Hoel
Cornelius W. Kruse
Edwin H. Lennette
J. Carrell Morris

Sheldon D. Murphy
Paul M. Newberne
Malcolm Pike
Marvin A. Schneiderman
Ronald C. Shank
Irwin H. Suffet
Sheldon Wolff

Subcommittee on Adsorption:

Irwin H. Suffet, Chairman
Martin Alexander
John T. Cookson, Jr.
Francis DiGiano

Robert Kunin
Joseph Shands
Vernon L. Snoeyink

Subcommittee on Chemistry of Disinfectants and Products:

J. Carrell Morris, Chairman
Russell F. Christman
William H. Glaze

George R. Helz
Robert C. Hoehn
Robert L. Jolley

Subcommittee on Efficacy of Disinfection:

Richard S. Engelbrecht, Chairman
Martin Favero
Arnold Greenberg
J. Donald Johnson
Cornelius W. Kruse

Edwin H. Lennette
Walter L. Newton
Vincent P. Olivieri
Pasquale V. Scarpino
Otis J. Sproul

Subcommittee on Epidemiology:

Marvin A. Schneiderman, Chairman
Edward C. Hammond
Ian T. T. Higgins
George B. Hutchison

Abraham M. Lilienfeld
Malcolm C. Pike
Arthur H. Wolff

Subcommittee on Nutrition:

Paul M. Newberne, Chairman
Renate D. Kimbrough
Orville A. Levander

Boyd Lee O'Dell
Daphne A. Roe
Ronald C. Shank

Subcommittee on Risk Assessment:

David G. Hoel, Chairman
David Axelrod
Charles C. Brown
Robert L. Dedrick

Ian C. Munro
Carrol S. Weil
Sheldon Wolff

Subcommittee on Toxicology:

Sheldon D. Murphy, Chairman
Joseph F. Borzelleca
James V. Bruckner
Donald R. Buhler
Hans P. Drobeck
James E. Gibson

Margaret Hitchcock
John C. Loper
Robert E. Menzer
Rudy J. Richardson
Robert J. Roberts
Craig Schnell

Staff:

Riley D. Housewright

Robert J. Golden

Meetings:

October 13-14, 1977	(Subcommittee on Epidemiology)
February 1, 1978	(Committee)
February 15, 1978	(Subcommittee on Chemistry of Disinfectants and Products)
February 15, 1978	(Subcommittee on Efficacy of Disinfection)
February 15, 1978	(Subcommittee on Adsorption)
March 1, 1978	(Subcommittee on Risk Assessment)
March 17, 1978	(Subcommittee on Nutrition)
March 22, 1978	(Subcommittee on Toxicology, Houston, TX)
March 30, 1978	(Subcommittee on Chemistry of Disinfectants and Products)
March 30, 1978	(Subcommittee on Efficacy of Disinfection)
April 11, 1978	(Subcommittee on Risk Assessment)
May 4, 1978	(Subcommittee on Adsorption)
June 1-2, 1978	(Subcommittee on Chemistry of Disinfectants and Products)
June 6-7, 1978	(Subcommittee on Toxicology, Denver, CO)
June 22-23, 1978	(Subcommittee on Efficacy of Disinfection)
June 30, 1978	(Subcommittee on Nutrition)

Accomplishments: The first report from the Subcommittee on Epidemiology, Epidemiological Studies of Cancer Frequency and Certain Organic Constituents of Drinking Water--A Review of Recent Literature, Published and Unpublished, has been approved by the committee and is being reviewed. Reports from the other subcommittees are in various stages of preparation.

COMMITTEE ON SULFUR OXIDES

Summary Description: The Environmental Protection Agency approached the National Research Council in the spring of 1977 to prepare a document on sulfur oxides. EPA had established a schedule for the updating of its air quality criteria for sulfur oxides and requested an NAS report to assist in the preparation. It was agreed that the general outline of a criteria document would be followed, except that effects on materials would not be covered.

Membership:

Herschel E. Griffin, Chairman
Benjamin G. Ferris, Jr.
Robert Frank
James N. Galloway
Rudolf B. Husar

Delbert C. McCune
Elmer Robinson
Frank E. Speizer
T. Craig Weidensaul

Staff:

John Redmond, Jr.

Meetings:

August 15, 1977
October 20, 1977 (Public Meeting)
October 21, 1977
December 1-2, 1977
January 16, 1978

Accomplishments: A draft document was completed in January 1978. After reviews and revisions, the report was sent to EPA on June 30, 1978. It includes a discussion of policy issues, and chapters on oxides in the atmosphere, effects on aquatic ecosystems, and vegetation, inhalation toxicology, and epidemiologic studies. Much work has been done since the original criteria document in 1969, but it is still impossible to identify which sulfur compound or associated cation is responsible for the health effects associated with sulfur oxides and particles. The use of tall stacks to reduce ground concentrations of sulfur dioxide in the immediate vicinity has resulted in sulfate's being distributed in a large geographic region downwind. This, with the presence of acid nitrates, has caused increased acid precipitation, particularly in the northeastern United States.

Because there are many tradeoffs involved in the sulfur oxides control program, the committee prepared a chapter on policy issues. These are defined as matters that require political and social decisions to be made on the basis of scientific judgment, but that are biased by national or societal goals.

COMMITTEE ON TOXICOLOGY (COT)

Summary Description: The Committee provides advice to the Air Force, the Army, the Coast Guard, the Consumer Product Safety Commission, the Department of Energy, the Environmental Protection Agency, the Federal Aviation Administration, the National Aeronautics and Space Administration, and the Navy. It suggests studies to these agencies and receives requests for advice and assistance from them under the terms of a contract with the Office of Naval Research and an interagency memorandum of agreement. It considers technical issues of developmental toxicology, recommends environmental exposure limits, suggests specific toxicology testing or research, advises on and participates in field studies on toxicology problems, and comments on the hazards and health implications of specific product uses.

Membership:

Joseph F. Borzelleca, Chairman
Yves Alarie
David Axelrod
Harold C. Grice
Ian T. T. Higgins
Warren H. Jones

H. George Mandel
Stata E. Norton
Charles F. Reinhardt
Joseph V. Rodricks
Ronald C. Shank
Philip G. Watanabe

Staff:

Gary R. Keilson
Robert G. Tardiff

Ralph C. Wands
Jack A. Winstead

Meetings:

July 27-28, 1977
February 13-14, 1978
April 20, 1978
June 8, 1978

Accomplishments: The Committee reviewed reports produced by its constituent groups (discussed below) and itself engaged in a number of activities:

- o Recommended acceptable exposures to chlorpyrifos aboard submarines.
- o Evaluated the toxicologic acceptability of shipboard use of synthetic hydraulic fluids (report issued in January 1978).
- o Sponsored a short symposium on short-term tests for carcinogenicity.
- o Provided interim inhalation-exposure limits for nitrogen trifluoride and hydrazine (preliminary letter reports issued in June 1978).

- o Evaluated the use of benzene-free toluene in a test method to determine the presence of water and sediment in lubrication oil.
- o Evaluated the hazards of using Freon 1301 (bromotrifluoromethane) as a fire extinguisher on the space shuttle (preliminary letter report issued in June 1978).
- o Undertook a review of the toxicity of morpholine.
- o Recommended the initiation of assessment documents for the EPA on alkylbenzene derivatives and aldehydes.
- o Undertook a review of the criteria and guidelines for establishing short-term inhalation-exposure limits.
- o Evaluated the protocol for testing 1,2-propylene glycol dinitrate (letter report issued in September 1977).

COT Committee on Fire Toxicology

Summary Description: The organization of the Committee was recommended by the COT in 1975 in recognition of the increased use of synthetic polymers as construction materials, reports of unusual toxicity of the combustion products of these materials, and the disorganized state of the art of testing the toxicity of pyrolysis and combustion products of these materials. The Committee provides advice to the National Aeronautics and Space Administration, the Federal Aviation Administration, and the Consumer Product Safety Commission, including evaluation of methods for assessing the toxicity of combustion products; development of guidelines for standardizing the measurement of the toxicity of pyrolysis and combustion products for use in selecting materials for interior construction of aircraft, for other confined spaces, and for consumer products; development of guidelines for using fire-toxicity data in the material-selection process; review of and recommendations regarding testing systems, particularly those developed from the Committee's recommendations; evaluation of data generated in the use of systems designed according to guidelines of the Committee; and evaluation of current data on specific materials.

Membership:

Charles F. Reinhardt, Chairman
 Herbert H. Cornish
 Arthur B. DuBois
 Robert M. Fristrom

Jean H. Futrell
 William E. Gibbs
 J. Douglas MacEwen
 Carl W. Walter

Staff:

Gary R. Keilson

Jack A. Winstead

Meetings:

November 30, 1977

May 26, 1978

Accomplishments: The Committee has evaluated the state of the art of methods for determining the toxicity of pyrolysis and combustion products of polymeric material; its report, Fire Toxicology: Methods for Evaluation of Toxicity of Pyrolysis and Combustion Products, was published in August 1977. The Committee is engaged in the establishment of animal test methods that are appropriate for evaluating the effects of fire on humans.

COT Committee to Revise NAS Publication 1138, Principles and Procedures for Evaluating the Toxicity of Household Substances

Summary Description: NAS Publication 1138, Principles and Procedures for Evaluating the Toxicity of Household Substances, was prepared by the COT in 1964 to help the Food and Drug Administration fulfill its responsibilities under the Federal Hazardous Substances Act (Public Law 86-613). Responsibility for implementing this Act was transferred to the Consumer Product Safety Commission, which asked that the publication be revised and expanded. In addition to the acute-toxicity test procedures in the present publication, the Committee to Revise NAS Publication 1138 considered behavioral and chronic toxicity, including teratogenicity, mutagenicity and carcinogenicity.

Membership:

Robert G. Tardiff, Chairman
(through September 1977)
Joseph F. Borzelleca
John Doull
Edward J. Fairchild

W. Gary Flamm
Raymond D. Harbison
Victor G. Laties
Marshall Steinberg

Subcommittee on Behavioral Toxicology:

Victor G. Laties, Chairman
Peter B. Dews

Donald E. McMillan
Stata E. Norton

Subcommittee on Chronic Toxicity:

John Doull, Chairman
Moreno L. Keplinger
Ted A. Loomis

Ian C. Munro
Norbert P. Page

Subcommittee on Dermal and Eye Toxicity:

Joseph F. Borzelleca, Chairman
John F. Griffith, Vice Chairman

W. Richard Green
Howard I. Maibach

Subcommittee on Ingestion:

Marshall Steinberg, Chairman
George J. Levinskas

Frederick Sperling

Subcommittee on Inhalation Toxicity:

Edward J. Fairchild, Chairman
William M. Busey
J. Wesley Clayton, Jr.

J. Douglas MacEwen
Theodore R. Torkelson

Subcommittee on Mutagenesis:

W. Gary Flamm, Chairman
David Brusick

John W. Drake
Sidney Green

Subcommittee on Reproduction and Teratogenesis:

Raymond D. Harbison, Chairman
Kudan S. Khera

Paul L. Wright

Staff:

Jack A. Winstead

Meetings: None

Accomplishments: The report was completed and transmitted to its sponsor in July 1977. The Committee and its subcommittees were discharged in September 1977.

COT Committee to Review the Bureau of Biomedical Sciences (CPSC)

Summary Description: The Consumer Product Safety Act of 1972 (Public Law 92-573; 15 U.S.C. 2051, et seq.) established the U.S. Consumer Product Safety Commission (CPSC) and transferred to it the responsibility for implementing several existing laws. The Committee to Review the Bureau of Biomedical Sciences was asked to determine the role of the CPSC's Bureau of Biomedical Sciences in fulfilling its mission, assess its current programs and laboratory needs, and recommend courses of action for future programs.

Membership:

Harry W. Hays, Chairman
Mary O. Amdur
Philip E. Enterline
Seymour L. Friess

William P. Jordan, Jr.
Robert A. Scala
Ralph G. Smith

Staff:

Jack A. Winstead

Meeting:

September 8, 1977

Accomplishments: The Committee's report was completed and transmitted to the sponsor in November 1977. The committee was discharged in January 1978.

COT Committee to Review the National Center for
Toxicological Research Program

Summary Description: The Commissioner of the Food and Drug Administration requested in November 1974 a review of the scientific program of the National Center for Toxicological Research (NCTR). Both a survey and detailed studies were called for.

The NCTR was established in 1971 by a Presidential directive at Jefferson, Arkansas, in facilities that formerly housed Army munitions production, to expand national capability in assessing the safety of chemicals that are present in or could be added to man's environment. It was visualized as a research resource for the FDA's mission of regulating foods, drugs, cosmetics, and other consumer products; as a needed research capability for the EPA; and as a national resource to be used by other government agencies. The NCTR has grown in a few years into a large and highly complex institution. A unique physical facility has been developed, a core scientific staff assembled, and research programs initiated.

The original stated primary mission of the NCTR is "the determination of adverse health effects resulting from long-term, low-level exposures to chemical toxicants in animal organisms; the development of improved methodologies and protocols for evaluating the safety of chemical toxicants; and the accumulation of data that will facilitate the extrapolation of toxicological data to people." A secondary mission is "to conduct such additional research programs as may make appropriate use of facilities and expertise of the NCTR, and contribute to its overall scientific capability without interfering or detracting from the primary mission." (More recent statements of NCTR's mission have been published in the Federal Register and in a summary statement issued by NCTR.)

Membership:

William R. Pritchard, Chairman
Seldon E. Bernstein
John J. Burns, Jr.
Sidney R. Galler

Perry J. Gehring
Fred C. Leone
Paul M. Newberne
Gabriel L. Plaa

Subcommittee on Pathology:

Paul M. Newberne, Chairman
G. Barry Pierce
Virgil B. Robinson

Richard L. Swarm
Bernard M. Wagner

Subcommittee for Statistics and Data Processing:

Fred Leone, Chairman

Advisors
John H. Farmer
David Gaylor
Marvin A. Schneiderman

Subcommittee for Program Development and Administration:

S. R. Galler, Chairman

Advisors
Seymour L. Friess
William G. Huber

Subcommittee on Research Resources:

Seldon E. Bernstein, Chairman

Advisors
Edward P. Les
Alvin F. Moreland

Subcommittee on the Teratology Program:

Perry J. Gehring, Chairman

Advisors
J. Julian Chisolm, Jr.
Raymond D. Harbison

Subcommittee on NCTR Policy Board:

S. R. Galler, Chairman
Seldon E. Bernstein

Ex officio
William R. Pritchard
Advisor
Thomas J. Kennedy, Jr.

Staff:

Ralph C. Wands

Meetings: None

Accomplishments: A report was submitted to the FDA in September 1977,
and the Committee was discharged in November 1977.

TOXICOLOGY INFORMATION PROGRAM COMMITTEE

Summary Description: The Toxicology Information Program (TIP) was established in the National Library of Medicine (NLM) in 1966 as a result of a recommendation of the President's Science Advisory Committee to develop a computer-based file of toxicology information that would become widely available. In response to a request for assistance from the director of NLM, the Toxicology Information Program Committee was established in June 1968. At the end of the year it had submitted its recommendations concerning a long-range concept of the TIP. Since then, the Committee's activity has been confined primarily to quarterly reviews of the progress of the TIP and to evaluation of proposed new projects.

Membership:

Tom S. Miya, Chairman
H.P.K. Agersborg, Jr.
Ralph L. Engle, Jr.
Richard Henderson

Dorothy B. Hood
Robert E. Menzer
Gabriel L. Plaa
Barry H. Rumack

Staff:

Henry S. Parker

Meetings:

November 29, 1977
June 15, 1978

Accomplishments: During this period, the chief concern of the committee was the contribution that the TIP could make to the vast information processing requirement posed by the Toxic Substances Control Act, and it made recommendations to the NLM and to the EPA in that regard.

PANEL ON EVALUATION OF HAZARDS ASSOCIATED WITH MARITIME PERSONNEL EXPOSURE TO A MULTIPLICITY OF CARGO VAPORS

Summary Description: The Panel was organized under the auspices of the Committee on Maritime Hazardous Materials of the NRC Commission on Sociotechnical Systems. Some personnel in the maritime industry are exposed consecutively to different chemicals in the course of their duties. Because of the possibility of synergism or interaction, the U.S. Coast Guard has requested an evaluation of the problem. The study will be undertaken in two phases. In the first, which will be essentially a feasibility study, a sample of approximately 20 chemicals will be selected by the Coast Guard and used in developing a

"model approach" for a rating system to evaluate and predict increase (either additive or synergistic) in the chronic toxic hazards to personnel owing to exposure to a multiplicity of chemical vapors. During this phase, several sources of toxicologic information will be searched to determine the availability of toxicologic data to be used in evaluating chronic exposure of marine inspectors to low concentrations of the vapors of the chemicals. If sufficient appropriate data are available, the relative risks will be evaluated. The means by which relative risks can be determined will be formulated for broader applications. It is contemplated that the Panel's report will be completed in December 1978.

Membership:

Sheldon D. Murphy, Chairman
Frederick W. Oehme, Co-chairman
Donald J. Ecobichon
Jerry R. Mitchell
Marvin A. Schneiderman

Carl C. Smith
Christopher F. Wilkinson
Hanspeter Witschi
James S. Woods

Staff:

James A. Frazier

Meetings: None

Accomplishments: The first meeting is scheduled for July 13, 1978.

ASSEMBLY OF LIFE SCIENCES REPORTS

ASSEMBLY OF LIFE SCIENCES REPORTS

Adjuvant Cancer Chemotherapy After Resection of Carcinoma of the Lung Medical Follow-up Agency, Division of Medical Sciences. T. W. Shields, E. W. Humphrey, and R. J. Keehn. Cancer, November 1977.

Airborne Particles Subcommittee on Airborne Particles, Committee on Medical and Biologic Effects of Environmental Pollutants, Board on Toxicology and Environmental Health Hazards. Baltimore, MD: University Park Press, 1978. 352 pp. ISBN 0-8391-0129-5 CIP; paperback \$18.00.

Ammonia Subcommittee on Ammonia, Committee on Medical and Biologic Effects of Environmental Pollutants, Board on Toxicology and Environmental Health Hazards. Baltimore, MD: University Park Press, 1978. 384 pp. ISBN 0-8391-0125-1 CIP; paperback \$22.50.

Animal Models of Thrombosis and Hemorrhagic Diseases, First International Registry of Committee on Animal Models and Genetic Stocks, Institute of Laboratory Animal Resources, Division of Biological Sciences. ILAR News, Fall 1977; reprints available from the Institute.

Army Technologists: 29-Year Follow Up for Cause of Death Medical Follow-up Agency, Division of Medical Sciences. S. Jablon and R. W. Miller. Radiology, March 1978; reprints available from the Agency.

Behavior Modification, History of: Experimental Foundations of Contemporary Research Subcommittee on Behavior Modification, Committee on Brain Sciences, Division of Medical Sciences. A. E. Kazdin. Baltimore, MD: University Park Press, 1978. 479 pp. ISBN 0-8391-1205-X; \$24.95.

Benign Diseases, A Review of the Use of Ionizing Radiation for the Treatment of Volume I. (HEW Publication (FDA) 78-8043) Committee to Review the Use of Ionizing Radiation for the Treatment of Benign Diseases; Division of Medical Sciences. U.S. Department of Health, Education, and Welfare, 1977. 60 pp. Available from U.S. Government Printing Office, 017-015-00141-5; \$2.10.

Biologic Effects of Electric and Magnetic Fields Associated with Proposed Project Seafarer Committee on Biosphere Effects of Extremely-Low-Frequency Radiation, Division of Medical Sciences, 1977. 451 pp. Available from Naval Electronic Systems Command, PME 117-214, Department of the Navy, Washington, D.C. 20360.

Carbon Monoxide Subcommittee on Carbon Monoxide, Committee on Medical and Biologic Effects of Environmental Pollutants, Division of Medical Sciences. National Academy of Sciences, 1977. 246 pp. ISBN 0-309-02631-8; \$9.75.

Causes of Death Following Occupational Exposure to Microwave Radiation (RADAR) 1950-1974 In: Symposium on Biological Effects and Measurement of Radio Frequency/Microwaves. D. G. Hazzard, ed. Medical Follow-up Agency, Division of Medical Sciences. C. D. Robinette and C. Silverman. DHEW Publication No. (FDA) 77-8026, July 1977.

Clinical Evaluation of Naltrexone Treatment of Opiate-Dependent Individuals Committee on Clinical Evaluation of Narcotic Antagonists, Division of Medical Sciences. Archives of General Psychiatry, March 1978.

Considerations of Health Benefit-Cost Analysis for Activities Involving Ionizing Radiation Exposure and Alternatives Advisory Committee on the Biological Effects of Ionizing Radiations, Division of Medical Sciences. Office of Radiation Programs, U.S. Environmental Protection Agency, 1977 (EPA 520/4-77-003). 199 pp. Available from Office of Radiation Programs, LAW-460, U.S. Environmental Protection Agency, Washington, D.C. 20460.

Control of Diets in Laboratory Animal Experimentation Committee on Laboratory Animal Diets, Institute of Laboratory Animal Resources, Division of Biological Sciences. ILAR News, Winter/Spring 1978; reprints available from the Institute.

Drinking Water and Health Safe Drinking Water Committee, Board on Toxicology and Environmental Health Hazards. National Academy of Sciences, 1977. 945 pp. ISBN 0-309-02619-9; \$20.75.

Estimating Distribution of Daily Intakes of Caffeine Committee on GRAS List Survey--Phase III, Food and Nutrition Board, Division of Biological Sciences, November 1977.

Factors Related to Survival Following Resection for Gastric Carcinoma: Analysis of 903 Cases Medical Follow-up Agency, Division of Medical Sciences. O. Serlin, R. J. Keehn, G. A. Higgins, Jr., H. W. Harrower, and G. L. Mendeloff. Cancer, September 1977.

Fetal and Infant Nutrition, and Susceptibility to Obesity: Summary of a Workshop Committee on Nutrition of the Mother and Preschool Child, Food and Nutrition Board, Division of Biological Sciences, February 1978. 9 pp. Available from the Board.

Fire Toxicology: Methods for Evaluation of Toxicity of Pyrolysis and Combustion Products Report Number 2. Committee on Fire Toxicology, Committee on Toxicology, August 1977. 39 pp. Available from NTIS, AD/A-043 899; paper \$4.50, microfiche \$3.00.

Follow-up Statement of the Committee on Military Environmental Research on the Status of Research into Biological Effects of Environmental Contaminants at Rocky Mountain Arsenal Committee on Military Environmental Research, Division of Medical Sciences, September 1977. 3 pp. Available from NTIS, AD/A-045 813; paper \$4.00, microfiche \$3.00.

Germplasm Resources, Conservation of: An Imperative Committee on Germplasm Resources, Division of Biological Sciences. National Academy of Sciences, 1978. 127 pp. ISBN 0-309-02744-6; \$6.50.

Human Vitamin B₆ Requirements: Proceedings of a Workshop, Letterman Army Institute of Research, Presidio of San Francisco, June 11-12, 1976. Committee on Dietary Allowances, Food and Nutrition Board, Division of Biological Sciences. National Academy of Sciences, 1978. 300 pp. ISBN 0-309-02642-3; \$13.25.

Hydrogen Sulfide Subcommittee on Hydrogen Sulfide, Committee on Medical and Biologic Effects of Environmental Pollutants, Board on Toxicology and Environmental Health Hazards. Baltimore, MD: University Park Press, 1978. 192 pp. ISBN 0-8391-0127-9 CIP; paperback \$16.50.

Impact of Infection on Nutritional Status of the Host, Symposium on Subcommittee on Interactions of Nutrition and Infections, Committee on International Nutrition Programs, Food and Nutrition Board, Division of Biological Sciences. American Journal of Clinical Nutrition, August 1977 and September 1977; bound reprints available from the Special Publications Department, American Journal of Clinical Nutrition, 9650 Rockville Pike, Bethesda, MD 20014; \$12.00.

Iron Subcommittee on Iron, Committee on Medical and Biologic Effects of Environmental Pollutants, Board on Toxicology and Environmental Health Hazards. Baltimore, MD: University Park Press, 1978. 256 pp. ISBN 0-8391-0126-0 CIP; paperback \$18.00.

Laboratory Animal Management: Wild Birds Committee on Birds, Institute of Laboratory Animal Resources, Division of Biological Sciences. National Academy of Sciences, 1977. 121 pp. ISBN 0-309-02621-0; \$7.75.

Laboratory Indices of Nutritional Status in Pregnancy Committee on Nutrition of the Mother and Preschool Child, Food and Nutrition Board, Division of Biological Sciences. National Academy of Sciences, 1978. 202 pp. ISBN 0-309-02729-2; \$9.25.

Laboratory Indices of Nutritional Status in Pregnancy: Summary Report Committee on Nutrition of the Mother and Preschool Child, Food and Nutrition Board, Division of Biological Sciences, 1977. 32 pp. Available from the Board.

Manpower in Basic Neurologic and Communicative Sciences: Present Status and Future Needs: Summary Report Summary and Recommendations of the Report of the Committee on Teaching/Research Manpower Needs in Basic Neurologic and Communicative Sciences, Division of Medical Sciences. Experimental Neurology, November 1977.

Military Rank at Separation and Mortality Medical Follow-up Agency, Division of Medical Sciences. R. J. Keehn. Armed Forces and Society, February 1978. Reprints available from the Agency.

The National Center for Toxicological Research: The Evaluation of its Program National Center for Toxicological Research Review Committee, Advisory Center on Toxicology, 1977. 162 pp. Available from NTIS; PB 277 441.

Natural History of Multiple Sclerosis, Studies on: 8. Early Prognostic Features of the Later Course of the Illness Medical Follow-up Agency, Division of Medical Sciences. J. F. Kurtzke, G. W. Beebe, B. Nagler, L. T. Kurland, and T. L. Auth. Journal of Chronic Diseases, December 1977.

Need for Research on Nutrition and Function, Workshop on the Committee on International Nutrition Programs, Food and Nutrition Board, Division of Biological Sciences. Report to Agency for International Development, March 1978.

Nitrogen Oxides Subcommittee on Nitrogen Oxides, Committee on Medical and Biologic Effects of Environmental Pollutants, Division of Medical Sciences. National Academy of Sciences, 1977. 340 pp. ISBN 0-309-02615-6; \$13.50.

Nutrition and Health, Symposium on: Role of the Federal Agencies Annual Meeting, Food and Nutrition Board, December 8, 1977. Food and Nutrition Board, Division of Biological Sciences, 1978. 36 pp. Available from the Board.

Nutrition and Human Reproduction Papers presented at the Conference on Nutrition and Human Reproduction, National Institutes of Health, Bethesda, February 1977; organized by the National Institute of Child Health and Human Development and by the Subcommittee on Nutrition and Fertility, Committee on International Nutrition Programs, Food and Nutrition Board, Division of Biological Sciences. W. Henry Mosley, ed. New York: Plenum Press, 1978. 524 pp. ISBN 0-306-31122-4; \$42.50.

Pilot Studies in the Clinical Evaluation of Narcotic Antagonists Committee on Clinical Evaluation of Narcotic Antagonists, Division of Medical Sciences, 1977. Available from NTIS: Vol. I, PB-270568/AS, paper \$6.50, microfiche \$3.00; Vol. II, PB-270569/AS, paper \$11.00, microfiche \$3.00.

Platinum-Group Metals Subcommittee on Platinum-Group Metals, Committee on Medical and Biologic Effects of Environmental Pollutants, Division of Medical Sciences. National Academy of Sciences, 1977. 239 pp. ISBN 0-309 02640-7; \$9.75.

Postresection Stage-Grouping in Carcinoma of the Lung Medical Follow-up Agency, Division of Medical Sciences. T. W. Shields and R. J. Keehn. Surgery, Gynecology, and Obstetrics, November 1977.

Principles and Procedures for Evaluating the Toxicity of Household Substances Committee for the Revision of NAS Publication 1138, Principles and Procedures for Evaluating the Toxicity of Household Substances, Committee on Toxicology. National Academy of Sciences, 1977. 136 pp. ISBN 0-309-02644-X; \$7.00.

Regional Emergency Medical Communications Systems Committee on Regional Emergency Medical Communications Systems, Division of Medical Sciences, 1978. 84 pp.

A Review of the Role of Health Sciences in the Consumer Product Safety Commission Bureau of Biomedical Sciences (CPSC) Review Committee, Committee on Toxicology, November 1977. 25 pp. Available from NTIS: AD/A-048 668; paper \$4.50, microfiche \$3.00.

Science and Patterns of Child Care Subcommittee on Importance of Early Experience in Child Development, Committee on Brain Sciences, Division of Medical Sciences. F. M. R. Lomax, J. Kagan, and B. G. Rosenkrantz. San Francisco: W. R. Freeman and Co., 1978. 261 pp. ISBN 0-7167-0296-7, \$12.00; ISBN 0-7167-0295-9, paper, \$6.00.

Social and Behavioral Correlates of Successful Breeding in Nonhuman Primate Colonies Seminar at the 27th Annual Meeting of the American Association for Laboratory Animal Science, Houston, November 9, 1976. Institute of Laboratory Animal Resources. Laboratory Animal Science, August 1977, supplement; reprints available from the Institute.

Splenectomy and Subsequent Mortality in Veterans of the 1939-1945 War Medical Follow-up Agency, Division of Medical Sciences. C. D. Robinette and J. W. Fraumeni, Jr. Lancet, July 16, 1977; reprints available from the Agency.

Surrogates for Humans in Motor Vehicle Crashes, Evaluation of Research on Committee on Evaluation of Research on Surrogates for Humans in Motor Vehicle Crashes, Division of Medical Sciences, 1978. 49 pp. Available from the Division.

Twin Study (NHLBI) of Cardiovascular Disease Risk Factors: Methodology and Summary of Results Medical Follow-up Agency, Division of Medical Sciences. M. Feinleib, R. J. Garrison, R. Fabsitz, J. C. Christian, Z. Hrubec, N. O. Borhani, W. B. Kannel, R. Rosenman, J. T. Schwartz, and J. O. Wagner. American Journal of Epidemiology, October 1977.

Zinc Subcommittee on Zinc, Committee on Medical and Biologic Effects of Environmental Pollutants, Board on Toxicology and Environmental Health Hazards. Baltimore, MD: University Park Press, 1978. 480 pp. ISBN 0-8391-0128-7 CIP; paperback \$21.00.

ASSEMBLY OF LIFE SCIENCES

CORRESPONDING SOCIETIES

ASSEMBLY OF LIFE SCIENCES CORRESPONDING SOCIETIES

The National Research Council (NRC) has long recognized the importance of maintaining close liaison with the many national scientific societies organized to encourage and promote research and better communication within specific scientific disciplines. The administrative reorganization of the NRC in 1973 required a redefinition of relationships between the professional societies and the new Assemblies and Commissions of the NRC. Each of these components was made responsible for the development of its own program to be responsive to U.S. and international needs with a single annual review and authorization by the NRC Governing Board.

The Assembly of Life Sciences realized that the scientific organizations of the many disciplines within the life sciences could make substantial contributions to the effectiveness of the Assembly's programs and that they could be a convenient and valuable channel through which aid could be solicited from outstanding scientists in specific fields. In addition, the Assembly wished to ensure that these organizations would be periodically informed of events and progress within the Assembly, so that they could, in turn, inform their membership.

Acting on a personal invitation from the Chairman of the ALS, a number of societies formerly affiliated with the Divisions of Biology and Agriculture and of Medical Sciences became Corresponding Societies of the Assembly. More recently, several additional societies have asked to become Corresponding Societies and have been accepted as such.

Following is a list of the ALS Corresponding Societies as of June 30, 1978.

Aerospace Medical Association	American Association of Immunologists
American Academy of Neurology	American Association of Pathologists
American Academy of Orthopaedic Surgeons	American College of Cardiology
American Academy of Pediatrics	American College of Laboratory Animal Medicine
American Agricultural Economics Association	American College of Obstetricians and Gynecologists
American Association for Cancer Research	American College of Physicians
American Association for Laboratory Animal Science	American College of Surgeons
American Association of Anatomists	American College of Veterinary Toxicologists
American Association of Blood Bank Chemists	American Dairy Science Association
American Association of Cereal Chemists	American Dental Association
American Association of Clinical Chemists	American Federation for Clinical Research

American Fisheries Society
 American Gastroenterological
 Association
 American Genetic Association
 American Industrial Hygiene
 Association
 American Institute of Nutrition
 American Meat Science Association
 American Medical Association
 American Neurological Association
 The American Ornithologists Union
 American Pharmaceutical Association
 The American Physiological Society
 The American Phytopathological
 Society
 American Psychiatric Association
 American Public Health Association
 American Roentgen Ray Society
 The American Society for Cell
 Biology
 American Society for Clinical
 Investigation
 American Society for Horticultural
 Science
 American Society for Microbiology
 American Society for Pharmacology
 and Experimental Therapeutics
 American Society for Photobiology
 American Society of Agricultural
 Engineers
 American Society of Agronomy
 American Society of Animal Science
 American Society of Biological
 Chemists
 American Society of Clinical
 Pathologists
 American Society of Hematology
 American Society of Human Genetics
 American Society of Ichthyologists
 and Herpetologists
 American Society of Mammalogists
 American Society of Parasitologists
 The American Society of
 Plant Physiologists
 American Society of Plant Taxonomists

The American Society of Tropical
 Medicine and Hygiene
 The American Society of Zoologists
 The American Surgical Association
 American Urological Association
 Animal Behavior Society
 Association for Tropical Biology
 Association of American Physicians
 Biometric Society, Eastern North
 American Region
 Biophysical Society
 Botanical Society of America
 Crop Science Society of America
 The Ecological Society of America
 Entomological Society of America
 Genetics Society of America
 Health Physics Society
 Institute of Food Technologists
 International Solar Energy Society,
 American Section
 The Mycological Society of America
 The Paleontological Society
 Phycological Society of America
 The Poultry Science Association, Inc.
 Radiation Research Society
 Reticuloendothelial Society
 Society for Developmental Biology
 Society for Economic Botany
 Society for Gynecologic
 Investigation
 Society for Investigative
 Dermatology
 Society for Neuroscience
 Society for Pediatric Research
 Society for Range Management
 Society for American Foresters
 Society of General Physiologists
 Society of Nematologists
 The Society of Systematic
 Zoology
 The Society of Toxicology
 Soil Science Society of America
 Weed Science Society of America
 The Wildlife Society